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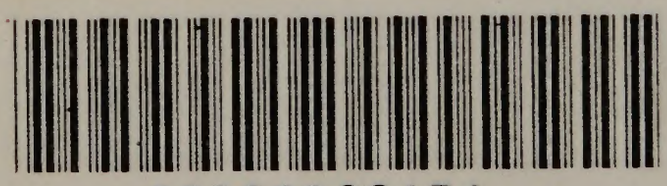

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THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE;

CONSISTING OF

ORIGINAL COMMUNICATIONS,

REVIEWS, RETROSPECTS, AND REPORTS,

INCLUDING THE

LATEST DISCOVERIES IN MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

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VOL. XV.

FEBRUARY AND MAY, 1853.

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OF

MEDICAL SCIENCE.

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   II. A Manual of Human Anatomy: Descriptive, Practical, and General. By Robert Knox, M. D., F. R. S. E., &c. Illustrated by 250 highly finished Wood Engravings, from Drawings by Dr. Westmacott.

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   II. Pulmonary Consumption and its Treatment. By Willoughby Marshall Burslem, M. D.

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Bowman's Medical Chemistry. Ashton on Corns, Bunions, &c. Hewitt on Coroners. Thomson's Dictionary of Domestic Medicine. Todd on the Resources of King's College, London, for Medical Education. Bennett on Inflammation of the Uterus. Ellis on the Working of the "Medical Charities Act."

BOOKS RECEIVED.

1. The Dietetics of the Soul. By Ernest von Feuchtersleben, M. D. Edited from the Seventh Edition. London: Churchill, 1852. Fcap. 8vo. pp. 202.

[*In our next.*]

2. A Practical Handbook of Medical Chemistry. By John E. Bowman, F. C. S., &c. Second Edition. London: Churchill, 1852. Fcap. 8vo. pp. 261.

[*A new edition of an excellent Manual, of which we have before spoken in terms of high and, as the judgment of the profession has proved, not undeserved praise; indeed we know no book so absolutely essential for the country practitioner. In the present edition Mr. Bowman has embodied all the discoveries in Medical Chemistry up to the date of publication.*]

3. A Treatise on Corns, Bunions, and Ingrowing of the Toe-Nail; their Cause and Treatment. By T. J. Ashton, Surgeon to the Blenheim Dispensary, &c. London: Churchill, 1852. Royal 12mo. pp. 82.

[*A useful, well-conceived, and clearly written little book on a painful class of affections, usually as troublesome to the surgeon as to his patient. We are glad to see Mr. Ashton's observations reprinted from the Medical Times and Gazette, in which they originally appeared.*]

4. Morse's Patent. Full Exposure of Dr. C. T. Jackson's Pretensions to the Invention of the American Electro-Magnetic Telegraph. By Hon. Amos Kendall. Washington: Towers, 1852. Pamphlet, pp. 63.

5. Observations on the Treatment of Lateral Curvature of the Spine; pointing out the Advantages to be gained by placing the Body in a position to produce Lateral Flexion of the Vertebral Column, combined with the after Application of firm Mechanical Support. By E. F. Lonsdale, F. R. C. S., &c. Second Edition. London: Churchill, 1852. 8vo. pp. 127.

[*We purpose soon to give a review of the several works which have been recently published on the Deformities of the Human Body.*]

6. Observations on Coroners. By William Hewitt, Surgeon, North Walsham. London: Churchill, 1852. 8vo. pp. 62.

[*Mr. Hewitt's pamphlet refers to a subject, the abuses of which imperatively demand the* immediate *attention of the Legislature; we therefore regret the appearance of his publication, which is essentially bad in both spirit and execution.*]

7. An Essay on the Action of Medicines in the System; or, on the Mode in which Therapeutic Agents introduced into the Stomach produce their peculiar Effects on the Animal Economy. Being the Prize Essay to which the Medical Society of London awarded the Fothergillian Gold Medal for 1852. By F. W. Headlam, A. B., M. R. C. S., &c. London: Churchill, 1852. 8vo. pp. 348.

[*In our next.*]

8. Transactions of the Medical Society of the State of Pennsylvania at its Annual Session held in the City of Philadelphia, May, 1852. Vol. II. Philadelphia: Published by the Society, 1852. 8vo. pp. 146.

9. Dictionary of Domestic Medicine and Household Surgery. By Spencer Thomson, M. D., &c. London: Groombridge, 1852. Parts II. to V. and XI. XII.

[*The conclusion of this work fully bears out the opinion we passed on its early Numbers. We congratulate Dr. Thomson in having so ably completed a difficult task. His book, demanding a place in every* household, *is equally worthy of a place in the library of the physician.*]

10. A Practical Sketch of the Asiatic Cholera of 1848: its Rationale

and (presumed) Pathology. Supplementary Remarks to Pamphlet on Low Inflammations. By S. F. Statham, Assistant Surgeon, University College Hospital. London: Taylor, Walton, and Maberly, 1852. Pamphlet, pp. 62.

11. Stricture of the Urethra; its Complications and Effects; with practical Observations on its Causes, Symptoms, and Treatment; and on a safe and efficient Mode of Treating its more intractable Forms. By Robert Wade, F. R. C. S., &c. London: Churchill, 1853. 8vo. pp. 360.

12. Some Observations on the Contamination of Water by the Poison of Lead; and its Effects on the Human Body: together with Remarks on some other Modes in which Lead may be injurious in Domestic Life. By James Bower Harrison, M. R. C. S. L., &c. London: Churchill, 1852. Post 8vo. pp. 196.

13. Pulmonary Consumption and its Treatment. By W. M. Burslem, M. D., &c. London: Churchill, 1852. 8vo. pp. 160.

14. The Sanitary State of Belfast, with Suggestions for its Improvement. A Paper read before the Statistical Section of the British Association at Belfast, September 7, 1852. By A. G. Malcolm, M. D. Belfast: Greer, 1852. Pamphlet, pp. 31, with eight coloured Plans.

15. The Fever at Boa Vista in 1845-6 unconnected with the visit of the "Eclair" to that Island. By Gilbert King, R. N., Inspector of Hospitals and Fleets. London: Churchill, 1852. 8vo. pp. 110.

16. Facts and Observations on the Physical Education of Children, especially as regards the Prevention of Spinal and other Deformities. By Samuel Hare, F. R. C. S., &c. London: Churchill, 1852. 8vo. pp. 71.

17. The Practical and Descriptive Anatomy of the Human Body. By Thomas H. Ledwich, F. R. C. S. I., and Edward Ledwich, F. R. C. S. I., Lecturers on Human and Comparative Anatomy in the Original School of Medicine. Dublin: Fannin and Co., 1852. 12mo. pp. 922.

18. On the Nature and Treatment of some Painful Affections of Bone. By Langston Parker, Surgeon to Queen's Hospital, Birmingham, &c. London: Churchill, 1852. Pamphlet, pp. 16.

19. On the Resources of King's College, London, for Medical Education: being the Lecture delivered at the opening of the Medical Classes in that Institution on the 1st of October, 1852. By R. B. Todd, M. D., F. R. S., &c. London: Parker, 1852. Pamphlet, pp. 53.

[*An able argument by the learned professor in behalf of the noble educational institution of which he is so bright an ornament.*]

20. A Dictionary of Practical Medicine, &c. By James Copland, M. D., F. R. S., &c. London: Longmans, 1853. Part XVI. "Spinal Column," to "Symptomatology." Vol. III. p. 865, to p. 1008.

21. Clinical Reports on Ovarian and Uterine Diseases; with Commentaries. By Robert Lee, M. D., F. R. S., &c. London: Churchill, 1853. Fcap. 8vo. pp. 340.

22. A Practical Treatise on Inflammation of the Uterus, its Cervix, and Appendages, and on its connexion with Uterine Disease. By James H. Bennett, M. D., &c. Third Edition. London: Churchill, 1853. 8vo. pp. 532.

[*We have, in a previous volume, reviewed at so much length the very valuable Treatise of Dr. Bennett, that nothing is left for us now to say except that he has here added the results of his subsequent experience, which bear out fully the views he originally propounded on so important a question of medical practice. The general plan of the work is much improved, the arrangement of the chapters having been slightly altered.*]

23. On the Connexion of Atmospheric Impurity with Disease. A Paper read before the Statistical Section of the British Association at Belfast, September 7, 1852. By H. M'Cormac, M. D. Pamphlet, pp. 7.

24. Moral-Sanatory Economy. By Henry M'Cormac, M. D., Consulting Physician to the Belfast General Hospital, &c. Belfast, 1852. (Printed for private circulation.) 8vo. pp. 150.

25. Syphilitic Diseases; their Pathology, Diagnosis, and Treatment, including Experimental Researches on Inoculation as a Differential Agent in testing the Character of these Affections. By John C. Egan, M. D., M. R. I. A., &c. London: Churchill; Dublin: Fannin, 1853. 8vo. pp. 346.

26. A Manual of Human Anatomy: Descriptive, Practical, and General. By Robert Knox, M. D., F. R. S. E., &c. Illustrated by 250 Wood Engravings. London: Renshaw, 1853. Fcap. 8vo. pp. 672.

27. Traité des Maladies Vénériennes. Par A. Vidal (de Cassis), Chirurgien de l'Hôpital du Midi, &c. Avec Planches, Gravées et Coloriées. Paris: Victor Masson, 1853. 8vo. pp. 552.

28. The Thirty-third Annual Report of the Visitors of the Staffordshire General Lunatic Asylum, for the Year ending December 31, 1851. Pamphlet, pp. 32.

29. An Introduction to Clinical Medicine. Six Lectures on the Method of examining Patients; Percussion; Auscultation; the Uses of the Microscope, and the Diagnosis of Skin Diseases. By J. H. Bennett, M. D., &c. Second Edition. Edinburgh: Sutherland and Knox, 1853. Fcap. 8vo. pp. 134.

30. Discours sur les Remèdes Secrets, autorisés par le Gouvernment. Par M. Soubeiran. Paris, 1852. Pamphlet, pp. 24.

31. An Essay on the Poison of the Cobra di Capello. By John Cockle, A. M., M. D., &c. London: Highley, 1852. Pamphlet, pp. 32.

32. The Introductory Lecture delivered on the occasion of the Opening of the Session, 1852–3, at the Belfast General Hospital. By A. G. Malcolm, M. D. Belfast, 1852. Pamphlet, pp. 25.

33. What to observe at the Bedside and after Death in Medical Cases. Published under the Authority of the London Medical Society of Observation. London: Churchill, 1853. Post 8vo. pp. 136.

34. A Lecture on the Working of the "Medical Charities Act." By Andrew Ellis, Fellow and late President of the Royal College of Surgeons in Ireland. Dublin: Fannin and Co., 1853. Pamphlet, pp. 34.

[*The scope of our Journal does not include medical politics; we are therefore prevented from saying more of Mr. Ellis' Lecture than that it is well and clearly written, and excellently got out.*]

35. The Scottish Review. A Quarterly Journal of Social Progress and General Literature. No. 1, January, 1853. Glasgow.

36. A Treatise on Operative Ophthalmic Surgery. By H. Haynes Walton, F. R. C. S., Surgeon to the Central London Ophthalmic Hospital, &c. London: Churchill, 1853. 8vo. pp. 628.

37. On the Pathology and Treatment of Hysteria. By R. B. Carter, M. R. C. S. E. London: Churchill, 1853. Royal 12mo. pp. 161.

[*In our next.*]

38. The Modern Practice of Physic; exhibiting the Symptoms, Causes, Prognostics, Morbid Appearances, and Treatment of the Diseases of all Climates. By Robert Thomas, M. D. Eleventh Edition. By Algernon Frampton, M. D., Physician to the London Hospital. London: Longmans, 1853. 2 vols. 8vo. pp. 755 and 564.

39. The British Journal of Homœopathy. No. XLIII. January, 1853. London: Aylott and Co.

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill, and Highley. (Received No. 21.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Published Quarterly. Edinburgh: Black. (Received No. 194.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Received Vol. XXVI.)

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D. London: Churchill. (Received Vol. XVI.)

5. Guy's Hospital Reports. London: Highley. (Not received.)

6. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

7. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Sir Robert Kane, and William Francis, Ph. D. Published Monthly. London: Taylor. (Received regularly.)

8. Monthly Journal of Medical Science. Edinburgh: Sutherland and Knox. (Received regularly.)

9. The Chemist, a Monthly Journal of Chemical Philosophy and of Chemistry. Edited by C. and J. Watt. London: Eicke. (Received regularly.)

10. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

11. Medical Association Journal. Edited by John Rose Cormack, M. D. Published Weekly. London: Honeyman. (Received regularly.)

12. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received No. 21.)

13. The Athenæum—Journal of English and Foreign Literature, Science &c. Published Weekly. London. (Received regularly.)

14. The Westminster Review. Published Quarterly. London: John Chapman. (Received regularly.)

AMERICA.

15. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Lea and Blanchard. (Received No. 48.)

16. The Medical Examiner and Record of Medical Science. Edited by F. G. Smith, M. D., and J. B. Biddle, M. D. Published Monthly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

17. The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. Purple, M. D. Published Monthly. New York: Hudson. (Received Vol. VIII., No. 3, and Vol. IX. No. 2.)

18. The American Journal of Science and Arts; conducted by Profes-

sors Silliman and B. Silliman, Jun., and J. D. Dana. Published Bi-monthly. New Haven. (Received No. 42.)

19. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (Received Vol. IX. No. 2. No. 1 of Vol. VI., Nos. 3 and 4 of Vol. VII., and Nos. 3 and 4 of Vol. VIII. not received.)

20. The American Journal of Dental Science. Edited by C. A. Harris, M. D. Published Quarterly. (Received Vol. III. No. 1.)

21. The Boston Medical and Surgical Journal. Published Weekly. Boston: Clapp. (Received regularly, except No. 1230, and Part 252, which have not been received.)

22. Southern Medical Reports. Edited by D. E. Fenner, M. D. To be published Annually. New Orleans: Norman. (Not received.)

FRANCE.

23. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

24. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

25. Journal de Pharmacie et de Chimie, &c. Published Monthly. Paris: Victor Masson. (Received regularly).

26. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Published three times a Week. Paris. (Received regularly.)

27. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

28. Le Moniteur des Hopitaux, Journal des Progrès de la Médecine et de la Chirurgie Pratiques. Redacteur en chef: M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

29. Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique. Published twice a Month. Par J. B. Cayol. Paris. (Received regularly.)

30. Revue Médico-Chirurgicale de Paris. Sous la Direction de M. Malgaigne. Published Monthly. (Received regularly.)

31. Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales. Published Monthly. Paris: Labé. (Received regularly.)

32. Bulletin de l'Académie Nationale de Médecine. Published Monthly. Paris: Baillière. (Not received.)

33. Journal des Connaissances Médico-Chirurgicales. Published twice a Month. Paris: Dr. A. Martin Lauzer. (Received regularly.)

34. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins Praticiens. Published Monthly. Par Lucas Champonnière. Paris. (Received regularly.)

35. Recueil de Médecine Vétérinaire Pratique. Published Monthly. Paris: Labé. (Received regularly.)

36. Journal des Connaissances Médicales pratiques et de Pharmacologie. Published twice a Month. Paris. (Received regularly.)

37. Annales Médico-Psychologiques. Par MM. Baillarger, Brierre de Boismont, et Cerise. Published Quarterly. Paris: Victor Masson. (Received regularly.)

38. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Re-

cueil pratique. Publiée par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

39. Repertoire de Pharmacie. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

40. Annales des Maladies de la Peau et de la Syphilis. Publiées par le Dr. Alphée Cazenave et le Dr. M. Chausit. Published Monthly. Paris. (No Number received since Part XII. Vol. IV.)

41. Gazette Médicale de Strasbourgh. Published Monthly. (Received regularly.)

42. Revue Thérapeutique du Midi, &c. Rédigée par M. le Dr. Saurel et M. le Dr. Barbaste. Published twice a Month. Montpellier. (Received regularly.)

43. Journal de la Société Impériale de Médecine de Bordeaux. (Not yet received.)

BELGIUM.

44. Nouvelle Encyclographie des Sciences Médicales. Publiée par une Société de Médecins. Published Monthly. (Received Vols. VIII., IX., and X., for 1852.)

45. Annales d'Oculistique, publiées par le Dr. Florent Cunier, Bruxelles. Published Quarterly. (Received Vol. XXVII. Nos. 3, 4, 5, and 6.)

46. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

GERMANY.

47. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle and Dr. C. Pfeufer, Professoren der Medizin an der Universität zu Heidelberg. Published Monthly. (Received Vol. III. Part 1.)

48. Tagsberichte über die Fortschritte der Natur und Heilkunde, erstattet von R. Froriep. Weimar. (Received Nos. 620 to 660; Nos. 30 to 313, and No. 640, not received.)

49. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur : Professor, Dr. Ferdinand Hebra. (Received Vol. VIII. Nos. 10 and 11. No. 4 not received.)

50. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Karl André. (Received regularly. Parts 2 and 4, 1851, and Parts 2 and 3, 1850, not received.)

51. Annalen der Chemie und Pharmacie. Herausgegeben von F. Wöhler und J. Liebig. Published Monthly. Heidelberg. (Received regularly.)

52. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern, in Jahre 1851. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Wurzburg: Stahel. (Received regularly.)

53. Wiener Medizinische Wochenschrift. Published Weekly. (Not received.)

54. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm und Enke. (Received Vol. XIX., Nos. 1, 2, 3, and 4.)

55. Archiv. für Heilkunde und Physiologie von Pr. Virchow. (Not yet received.)

DENMARK.

56. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer. Published Monthly. Kjobenhavn. (Not received.)

NORWAY.

57. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund. Voss. Published Monthly. Christiania: Feilberg & Landmark. (Received Nos. 5 to 10, for 1852.)

SWEDEN.

58. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm: Fritze. (Received Parts 8, 9, and 10, for 1852: Part 11, for 1850, and Parts 9 to 12, 1849, not received.

ITALY.

59. Il Raccoglitore Medico di Fano; Giornale di Medicina e Chirurgia. Dal Dottori Malagodi e Franceschi. Published twice a Month. (Received regularly.)

60. Gazzetta Medica Italiana Federativa Toscana. Florence. Published Weekly. (Received all the Nos. of the New Series, except Nos. 32 to 36.)

61. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (Received regularly. The April Number, for 1851, not received.)

62. Correspondenza Scientifica in Roma. (Received Nos. 36 to 40, for 1852.)

63. Giornale Veneto di Scienze Mediche. Published Monthly. (Received Parts 22, 23, and 24.)

SPAIN.

64. Boletin de Medicina, Cirurgia, y Farmacia; Periodico oficial de la Sociedad Médica General de Socorros Mutuos. Madrid. Published Weekly. (Received regularly, except Nos. 33 and 82.)

NOTICES TO CORRESPONDENTS.

In this Number we commence a Gallery of Portraits of the living eminent Physicians and Surgeons of Ireland with that of Dr. Graves. We expect to be able to continue the Series uninterruptedly, and to present our Subscribers with one Portrait in each Number of our Journal. That of Sir Philip Crampton, Bart., will appear in the Number for May.

We have received some inquiries relative to the composition of the "Eau Pagliari," a notice of which was contained in our last Number. Our translation was from M. Sédillot's original Memoir, in which the *Balsam*, not the *Tincture*, of Benzoin is directed to be employed in its preparation. The term *Balsam* of Benzoin is synonymous with *Gum* Benzoin of the English druggists.

In addition to the Reports of the Dublin Pathological Society, those of the Association of the King and Queen's College of Physicians, and of the Dublin Obstetrical Society, will, for the future, be published exclusively in our pages.

The great increase in the number of "Original Communications" latterly sent to us for publication has compelled us to allot more space to that department of our Journal. This we have been enabled to do by an alteration in our typographical arrangements. By—as the printers technically term it—*omitting the leads*, each page of this Part contains now ten lines more than it formerly did, equivalent in our present Number to thirty-two pages of additional matter. We are thus enabled to give our Subscribers this advantage without interfering with the postal arrangements of the Publishers.

We have been compelled to reduce considerably the number of our American Exchanges, in consequence of the irregularity with which they have recently reached us.

Books and Periodicals published in Northern Europe, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. Williams and Norgate, London." Our Correspondents in France, Belgium, Southern Germany, Italy, and Spain, are requested to communicate with us through "Doctor C. Higgins, 30, Rue Rivoli, Paris."

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8. Histoire des Apothicaires chez les Principaux Peuples du Monde, depuis les temps les plus reculés jusqu' à nos jours, suivie du Tableau de l'État Actuel de la Pharmacie en Europe, en Asie, en Afrique, et en Amérique. Par A. Philippe, Docteur en Médecine, Chirurgien en Chef de l'Hôtel Dieu, &c. &c., . . 440

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The Rights of Marischal College, Aberdeen. Shapter on Sanitary Measures. Bird on Urinary Deposits. Wilson's Dissector's Manual. Anderson on Hysteria. Wiblin and Harvey on Yellow Fever. Arnott on Benumbing Cold. Valentin's Physiology, by Brinton. Report on the Medical Charities of Ireland. Chapman on Ulcers.

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BOOKS RECEIVED.

1. A Treatise on Auscultation and Percussion. By Dr. Joseph Skoda. Translated from the Fourth Edition. By W. O. Markham, M. D., &c. London: Highley and Son, 1853. Royal 12mo. pp. 356.

[*To be reviewed in our next.*]

2. The Right of Marischal College and University, Aberdeen, to confer Degrees, not only in Arts, as admitted, but in Divinity, Law, and Medicine, vindicated against the attacks of the responsible administrators of King's College and University, Old Aberdeen; and shown to have been affirmed more than 100 Years ago by the House of Lords as the Supreme Court of Appeal, under the instructions of Lord Chancellor Hardwicke. By One of the Professors. Aberdeen: Smith, 1853. 8vo. pp. 55.

[*This pamphlet is solely of local interest; yet we must condemn the angry feeling exhibited by the style in which it is written.*]

3. Atlas of the Formation of the Human Body, in the earliest stages of its development. Compiled from the Researches of the late Professor D. M. P. Erdl. By Joseph Kahn, M. D. (Vienna). Illustrated by 60 Figures, contained in 13 Plates. London: Churchill, 1852. Royal 4to. pp. 29.

[*In our next.*]

4. Observations on Syphilis, and on Inoculation, as the Means of Diagnosis in Ulcers and Discharges invading the Genital Organs; comprising also a brief outline of the Ancient and Modern Treatment of Syphilis, and pointing to New Views, and to a New Method of treating that Disease. By J. C. Christophers, M. R. C. S. London: Churchill, 1853. 8vo. pp. 74.

5. Six Lectures on Materia Medica, and its Relations to the Animal Economy. Delivered before the Royal College of Physicians in 1852. By John Spurgin, M. D., F. R. C. P. S., &c. London: Churchill, 1853. 8vo. pp. 204.

[*In our next.*]

6. Contributions to Obstetric Pathology and Practice. By James Y. Simpson, M. D., Professor of Midwifery in the University of Edinburgh. Edinburgh: Sutherland and Knox, 1853. 8vo. pp. 80.

7. Fifteenth Annual Report of the Suffolk District Lunatic Asylum, December, 1852. Woodbridge: Loder, 1853. Pamphlet, pp. 30.

8. On Laceration of the Perineum during Labour. By John Cockle, A. M., M. D., F. R. C. S. London: Highley, 1853. Pamphlet, pp. 8.

9. Sanitary Measures and their Results; being a Sequel to "The History of Cholera in Exeter, in 1832." By Thomas Shapter, M. D., &c. London: Churchill, 1853. Pamphlet, pp. 32.

[*This pamphlet contains some useful hints from the pen of the able author of "The History of the Cholera in Exeter," a work which rivals Defoe's History of the Plague in London.*]

10. Urinary Deposits, their Diagnosis, Pathology, and Therapeutical Indications. By Golding Bird, A. M., M. D., &c. Fourth Edition, revised and enlarged. London: Churchill, 1853. Royal 12mo. pp. 473.

[*Of this fourth edition of Dr. Bird's book, we need say no more than that it is in every respect worthy of the reputation of the author, being still in advance of every other work on the subject.*]

11. The Dissector's Manual of Practical and Surgical Anatomy. By Erasmus Wilson, F. R. S. Second Edition. Illustrated with Wood Engravings. London: Longmans, 1853. 12mo. pp. 626.

[*In this volume Mr. Wilson describes the anatomy of the human body in regions; we prefer it to his Anatomist's Vade-Mecum, and are therefore glad to see the publication of a new edition.*]

12. New Views on Provisional Callus. By Frank H. Hamilton, A. M., M. D. Buffalo, U. S. 1853. Pamphlet, pp. 15.

13. A Treatise on Removable and Mitigable Causes of Death: their Modes of Origin and Means of Prevention; including a Sketch of Vital Statistics, and the leading Principles of Public Hygiene in Europe and India. By Norman Chevers, M. D., Bengal Medical Service. Vol. I. Calcutta: Bishop's College Press, 1852. 8vo. pp. 329 and xli.

[*In our next.*]

14. Lectures on the Nature and Treatment of Fever. By D. J. Corrigan, M. D., M. R. I. A., &c. Dublin: Fannin and Co., 1853. Royal 12mo. pp. 104.

15. On Diseases of Women, and Ovarian Inflammation, in relation to Morbid Menstruation, Sterility, Pelvic Tumours, and Affections of the Womb. By E. J. Tilt, M. D., &c. Second Edition. London: Churchill, 1853. 8vo. pp. 276.

16. Hysterical and Nervous Affections of Women. (Read before the Harveian Society.) By W. J. Anderson, F. R. C. S., &c. London: Churchill, 1853. 12mo. pp. 39.

[*Though adapted for the pages of a medical periodical, scarcely deserving of being published in a separate form.*]

17. On Near Sight, Aged Sight, Impaired Vision, and the Means of Assisting Sight. By William White Cooper, F. R. C. S., &c. Second Edition. London: Churchill, 1853. Fcap. 8vo. pp. 320.

18. Histoire des Apothicaires chez les Principaux Peuples du Monde, depuis les temps les plus reculés jusqu' à nos jours; Suivie du Tableau de l'état actuel de la Pharmaçie en Europe, en Asie, en Afrique, et en Amérique. Par A. Philippe, D. M., &c. Paris, 1853. 8vo. pp. 452.

19. Permanent Cure of Reducible Hernia. By George Hayward, M. D., of Boston, Mass. Presented to the American Medical Association, at its Session of May, 1852. Philadelphia: Collins, 1852. Pamphlet, pp. 25.

20. An Account of Yellow Fever, as it occurred on Board the R. M. S. Ship La Plata, in the Month of November, 1852. By John Wiblin, F.R.C.S., &c., and Alexander Harvey, M. D., &c. (Reprinted from the Lancet, of February 12, 1853.) Pamphlet, pp. 22.

[*An excellent account of the importation of yellow fever to the very shores of England in November last, from the West India Islands. The origin and spread of the disease on board ship, together with its special characteristics, are well described; the authors have, we think, clearly traced its development to contagion.*]

21. Cursory Remarks on Recruiting and Recruits. By Frederick Roberts, Staff Surgeon of the Second Class. London: Parker, Furnivall, and Parker, 1853. Pamphlet, pp. 31.

22. On the Local Application of a Benumbing or Congealing Temperature in Inflammatory, Painful, and Malignant Diseases. By James Arnott, M. D., &c. London: Churchill. (A collection of Essays in 8vo.) 1849 to 1852.

[*This small but able volume we commend most strongly to the notice of our readers. Some of Dr. Arnott's valuable contributions to therapeutics we have on previous occasions noticed in terms of high commendation in the pages of our Journal, and the present on the Employment of Benumbing Cold in the Treatment of Disease, we consider as extremely valuable; we have ourselves tested its application, with the most complete success, in some cases.*]

23. Fifth Report of the Somerset County Asylum for Insane Patients, from 1st January, to the end of the Year 1852. Wells, 1853. Pamphlet, pp. 60.

24. First Report of the Surgeons of the New York Ophthalmic Hospital, with the Address of the Hon. C. S. Woodhull, for the Year 1852. New York: Fanshaw, 1853. Pamphlet, pp. 16.

25. On Lithotrity and Lithotomy. With numerous wood-cuts. By William Coulson, Surgeon to St. Mary's Hospital. London: Churchill, 1853. 8vo. pp. 388.

26. A Text-Book of Physiology. By Dr. G. Valentin, Professor of Physiology in the University of Bern. Translated and Edited from the third German Edition. By William Brinton, M. D., &c. With upwards of 500 Illustrations on wood, copper, and stone. London: Renshaw, 1853. Part 1. 8vo. pp. 320.

[*This translation of perhaps the most valuable text-book of physiology ever published is highly creditable to Dr. Brinton, and we thank him warmly for presenting it to us in an English dress. The style is clear and smooth, quite free from the defects which mar most translations from the German. The getting out of the volume, too, is highly creditable to the publisher, and we anxiously look for its completion, when we will notice it in our Review department.*]

27. Report of the Meeting of the Association of Medical Officers of Hospitals for the Insane, held at Oxford, July 21, 1852. pp. 2.

28. Homœopathy : its Tenets and Tendencies, Theoretical, Theological, and Therapeutical. By J. Y. Simpson, M. D., F. R. S. E., &c. Third Edition. Edinburgh: Sutherland and Knox, 1853. 8vo. pp. 292.

[*In our next.*]

29. The Obstetric Catechism, containing 2347 Questions and Answers on Obstetrics proper. With 150 Illustrations. By Joseph Warrington, M. D. Philadelphia: Barrington and Haswell, 1853. 12mo. pp. 445.

30. Inflammation of the Breast and Milk Abscess. By T. W. Nunn, Surgeon to the Western Dispensary. London: Renshaw, 1853. Fcap. 8vo. pp. 52.

31. The Scottish Review. A Quarterly Journal of Social Progress and General Literature. No. 11. April, 1853. Glasgow.

32. Medical Charities, Ireland. First Annual Report of the Commissioners for administering the Laws for Relief of the Poor in Ireland, under the Medical Charities Act, 14 & 15 Vict. c. 68. Presented to both Houses of Parliament by command of Her Majesty. Dublin: Thom, 1853. 8vo. pp. 236.

[*A most valuable statistical record of the introduction and working of the new plan for the medical relief of the Sick Poor in Ireland.*]

33. Homœopathy; its Globules (Bubbles) analyzed. By W. J. Cox, M. R. C. S., &c. London: Elliott, 1853. Pamphlet, pp. 38.

34. The British Journal of Homœopathy. No. XLIV. April, 1853. London: Aylott and Co.

35. The Treatment of Obstinate Ulcers and Cutaneous Eruptions on the Leg without confinement. By Henry T. Chapman, F. R. C. S., &c. Second Edition. London: Churchill, 1853. Royal 12mo, pp 156.

[*We are gratified to find that our favourable notice of Mr. Chapman's volume has been responded to by the profession, as evidenced by the demand for a second edition. It is now improved and revised throughout, much new and valuable matter, especially on the treatment of eruptions of the legs, being added.*]

36. On Prophylactic and Curative Syphilization. By Victor de Méric, M. R. C. S., &c. London: Churchill, 1853. Pamphlet, pp. 24.

37. The Modern Advancement of Practical Medicine and Surgery: an Inaugural Address to the Medico-Chirurgical Society of Edinburgh. By James Y. Simpson, M. D., President of the Society. Edinburgh: Sutherland and Knox, 1853. Pamphlet, pp. 18.

38. On Continuous Molecular Changes, more particularly in their relation to Epidemic Diseases: being the Oration delivered at the Eightieth Anniversary of the Medical Society of London. By John Snow, M. D., Vice-President of the Society. Published by request of the Society. London: Churchill, 1853. Pamphlet, pp. 38.

39. Appendix to the Treatise on the Structure, Diseases, and Injuries of the Blood-Vessels. With Statistical Deductions. Being the Essay to which the Jacksonian Prize for the Year 1844 was awarded by the Royal College of Surgeons of England. By Edwards Crisp, M. D., &c. London: Teape, 1851. Pamphlet.

40. On Perforating Ulcer of the Stomach, from non-Malignant Disease. Part I. By Edwards Crisp, M. D., &c. (Reprinted from the Medical Examiner. London: Teape and Son, 1852. Pamphlet, pp. 22.

PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

GREAT BRITAIN.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. Published Quarterly. London: Churchill, and Highley. (Received No. 22.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Published Quarterly. Edinburgh: Black. (Received No. 195.)

3. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co.

4. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Published Half-Yearly. Edited by W. H. Ranking, M. D., and C. B. Radcliffe, M. D. London: Churchill.

5. Pharmaceutical Journal and Transactions. Published Monthly. London. Edited by Jacob Bell. (Received regularly.)

6. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Sir Robert Kane, and William Francis, Ph. D. Published Monthly. London: Taylor. (Received regularly.)

7. Monthly Journal of Medical Science. Edinburgh: Sutherland and Knox. (Received regularly.)

8. The Chemist, a Monthly Journal of Chemical Philosophy and of Chemistry. Edited by J. and C. Watt. London: Piper, Brothers. (Received regularly.)

9. Medical Times and Gazette. Published Weekly. London: John Churchill. (Received regularly.)

10. Medical Association Journal. Edited by John Rose Cormack, M. D. Published Weekly. London: Honeyman. (Received regularly.)

11. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. Published Quarterly. London: Churchill. (Received No. 22.)

12. Quarterly Journal of Microscopical Science: including the Transactions of the Microscopical Society of London. Edited by E. Lankester, M. D., F. R. S., &c., and G. Busk, F. R. C. S. E., F. R. S., &c. London: Highley and Son.

13. The Glasgow Medical Journal. Published Quarterly. Griffin and Co. (Received No. I.)

14. The Athenæum—Journal of English and Foreign Literature, Science, &c. Published Weekly. London. (Received regularly.)

15. The Westminster Review. Published Quarterly. London: John Chapman. (Received regularly.)

AMERICA.

16. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Published Quarterly. Philadelphia: Lea and Blanchard. (Received No. 49.)

17. The Medical Examiner and Record of Medical Science. Edited by F. G. Smith, M. D., and J. B. Biddle, M. D. Published Monthly. Philadelphia: Lindsay and Blakiston. (Received regularly.)

18. The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. Purple, M. D., and J. Smith, M. D. Published Monthly. New York: Hudson. (Received all the deficient Numbers.)

19. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana. Published Bi-monthly. New Haven. (Received Nos. 43 and 44.)

20. The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica, Quarterly. (Received Vol. IX. No. 3. No. 1 of Vol. VI., Nos. 3 and 4 of Vol. VII., and Nos. 3 and 4 of Vol. VIII. not received.)

21. The American Journal of Dental Science. Edited by C. A. Harris, M. D. Published Quarterly. (Not received.)

22. The Boston Medical and Surgical Journal. Published Weekly. Boston: Clapp. (Received regularly, except No. 1230, and Part 252, which have not been received.)

23. The Charleston Medical Journal and Review. Edited and Published by D. J. Cain, M. D., and E. P. Porcher, M. D. Published bi-monthly. Charleston, S. C. (Received regularly for this Year; our Set is deficient in No. 1 of Vol. VI., and in the whole of Vol. VII., which we will thank the Editors to forward to us if they wish the Exchange to be continued.)

24. The Stethoscope and Virginia Medical Gazette. Edited by P. C. Gooch, M. D. Published Monthly. Richmond: Virginia. (Received regularly for this year; but our Set is deficient in Nos. 2, 3, 4, 5, 11, and 12 of Vol. I., and Nos. 1, 3, 4, 5, 7, 8, 9, and 11 of Vol. II., which we will thank the Editor to forward to us, if he wishes the Exchange to be continued.)

25. Southern Medical Reports. Edited by D. E. Fenner, M. D. To be published Annually. New Orleans: Norman. (Not received.)

FRANCE.

26. Gazette Médicale de Paris. Published Weekly. Paris. (Received regularly.)

27. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Published Monthly. Paris: Labé. (Received regularly.)

28. Journal de Pharmacie et de Chimie, &c. Published Monthly. Paris: Victor Masson. (Received regularly).

29. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Published three times a Week. Paris. (Received regularly.)

30. La Lancette Française, Gazette des Hôpitaux civils et militaires. Published three times a Week. Paris. (Received regularly.)

31. Le Moniteur des Hôpitaux, Journal des Progrès de la Médecine et de la Chirurgie Pratiques. Redacteur en chef: M. H. de Castelnau. Paris. Published three times a Week. (Received regularly.)

32. Revue Médicale Française et étrangère, Journal des Progrès de la Médecine Hippocratique. Published twice a Month. Par J. B. Cayol. Paris. (Received regularly.)

33. Revue Médico-Chirurgicale de Paris. Sous la Direction de M. Malgaigne. Published Monthly. (Received regularly.)

34. Archives Générales de Médecine; Journal Complémentaire des Sciences Médicales. Published Monthly. Paris: Labé. (Received regularly.)

35. Bulletin de l'Académie Nationale de Médecine. Published Monthly. Paris: Baillière. (Not received.)

36. Revue de Thérapeutique Médico-Chirurgicale. Published twice a Month. Paris: Dr. A. Martin-Lauzer. (Received regularly.)

37. Journal de Médecine et de Chirurgie Pratiques a l'Usage des Médecins Praticiens. Published Monthly. Par Lucas Champonnière. Paris. (Received regularly.)

38. Recueil de Médecine Vétérinaire Pratique. Published Monthly. Paris: Labé. (Received regularly.)

39. Journal des Connaissances Médicales pratiques et de Pharmacologie. Published twice a Month. Paris. (Received regularly.)

40. Annales Médico-Psychologiques. Par MM. Baillarger, Brierre de Boismont, et Cerise. Published Quarterly. Paris: Victor Masson. (Received regularly.)

41. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil pratique. Publiée par le Docteur Debout. Published twice a Month. Paris. (Received regularly.)

42. Repertoire de Pharmacie. Recueil pratique. Par M. le Dr. Bouchardat. Published Monthly. (Received regularly.)

43. Annales des Maladies de la Peau et de la Syphilis. Publiées par le Dr. Alphée Cazenave et le Dr. M. Chausit. Published Monthly. Paris. (No Number received since Part XII. Vol. IV.)

44. Gazette Médicale de Strasbourgh. Published Monthly. (Received regularly.)

45. Revue Thérapeutique du Midi, &c. Publié par le Dr. Louis Saurel. Published twice a Month. Montpellier. (Received regularly.)

46. Journal de Médecine de Bordeaux. Redacteur en chef, M. Costes. Published Monthly. (Received regularly.)

BELGIUM.

47. Nouvelle Encyclographie des Sciences Médicales. Publiée par une Société de Médecins. Published Monthly. (Received Vols. XI. and XII., and Table, for 1852.)

48. Annales d'Oculistique, publiées par le Dr. Florent Cunier, Bruxelles. Published Quarterly. (Received Vol. XXIX. No. 1.)

49. Annales et Bulletin de la Société de Médecine de Gand. Published Monthly. (Received regularly.)

GERMANY.

50. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle and Dr. C. Pfeufer, Professoren der Medizin an der Universität zu Heidelberg. Published Monthly. (Not received.)

51. Tagsberichte über die Fortschritte der Natur-und Heilkunde; erstattet von R. Froriep. Weimar. (Received Nos. 660 to 697, and 30 to 313. No. 640 not received. We regret to find that Dr. Froriep has determined to close here his excellent Journal.)

52. Zeitschrift der Kais. Kön. Gesellschaft der Aerzte zu Wien. Redacteur: Professor, Dr. Ferdinand Hebra. (Received Vol. VIII. No. 9. No. 4 not received.)

53. Vierteljahrschrift für die praktische Heilkunde, herausgegeben von der medicinischen Facultät in Prag. Published Quarterly. Karl André. (Received regularly. Parts 2 and 4, 1851, and Parts 2 and 3, 1850, not received.)

54. Annalen der Chemie und Pharmacie. Herausgegeben von F. Wöhler und J. Liebig. Published Monthly. Heidelberg. (Received regularly, except Nos. 2 and 3 of Vol. LXXXIV.)

55. Canstatt's Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern, im Jahre 1852. Redigirt von Pr. Scherer, Pr. Virchow, und Dr. Eisenmann. Würzburg: Stahel. (Received Part 1.)

56. Journal für Kinderkrankheiten. Herausgegeben von Dr. Fr. J. Behrend und Dr. A. Hildebrand. Published Monthly. Erlangen: Palm und Enke. (Received Vol. XIX., Nos. 5 and 6, and Vol. XX., No. 1.)

57. Archiv. für Heilkunde und Physiologie von Pr. Virchow. (Not yet received.)

HOLLAND.

58. Geneeskundige Courant von het Koningrijk der Nederlanden. (Not yet received.)

DENMARK.

59. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af Dr. Dahlerup. Published Monthly. Kjobenhavn. (Not received.)

60. Hospitalsmeddelelser. Copenhagen. (Not yet received.)

NORWAY.

61. Norsk Magazin, for Lægevidenskaben, udgivet af det medicinske Selskab i Christiania. Redigeret af W. Boeck. Faye. A. W. Münster. Lund. Voss. Published Monthly. Christiania: Feilberg & Landmark. (Not yet received.)

SWEDEN.

62. Hygiea, Medicinsk och Pharmaceutisk Månads-Skrift. Published Monthly. Stockholm: Fritze. (Not received since Part 10, for 1852: Part 11, for 1850, and Parts 9 to 12, 1849, not received.)

ITALY.

63. Il Raccoglitore Medico di Fano; Giornale di Medicina e Chirurgia. Dal Dottori Malagodi e Franceschi. Published twice a Month. (Received regularly.)

64. Gazzetta Medica Italiana Federativa Toscana. Florence. Published Weekly. (Received all the Nos. of the New Series, except Nos. 32 to 36.)

65. Bulletino delle Scienze Mediche. Publicato per cura della Società Medico-Chirurgica di Bologna. Published Monthly. (Received regularly. The April Number, for 1851, not received.)

66. Correspondenza Scientifica in Roma. (Received Nos. 41 and 42.)

67. Giornale Veneto di Scienze Mediche. Published Monthly. (None received since Part 24.)

SPAIN.

68. Boletin de Medicina, Cirurgia, y Farmacia; Periodico oficial de la Sociedad Médica General de Socorros Mutuos. Madrid. Published Weekly. (Received regularly, except Nos. 33 and 82.)

69. El Heraldo Médico. Edited by Professor G. de le Vega. Madrid. Published Weekly. (Received regularly. Nos. 2 to 13 not received.)

NOTICES TO CORRESPONDENTS.

SINCE the publication of our last Number, the hand of death has removed from amongst us one of the great luminaries of the Profession in Ireland, DR. GRAVES, the Editor of this Journal shortly after its first publication. At present we merely announce his decease, but in our next we hope to be able to present our readers with a Biographical Memoir of one who has done so much to raise the character of the Irish School of Medicine to the high position it now occupies.

THE extent of our Original Communications has compelled us to postpone some Reviews, Cases, and Extracts from Foreign Journals, until our next Number.

The following is an extract from a Letter we have received from Mr. Butcher:—"In a Paper of mine on Fractures of the Femur, published in the last Number of your Journal, I omitted to state, that the Case of Toole was under charge of Mr. Read, who was then surgeon to the Hospital, and any credit that may attach to the treatment of it is due to him: likewise, that a lever was brought to bear on the original site of fracture, so as to rupture the provisional callus, when extension was fully made."

The First Part of the Transactions of the Association of the King and Queen's College of Physicians of Ireland will appear in our next Number: the Reports of the Pathological and Obstetrical Societies will also be continued.

In answer to some inquiries, we beg to state, that we have no intention of appending the names of the writers to the Reviews in our Journal; also, that our *corps de revue* is complete, and we do not require *volunteers.*

Books and Periodicals published in Northern Europe, intended for our Journal, should be transmitted "For the Editor of the Dublin Quarterly Medical Journal, care of Messrs. Williams and Norgate, London." Our Correspondents in France, Belgium, Southern Germany, Italy, and Spain, are requested to communicate with us through "Doctor Higgins, 30, Rue Rivoli, Paris."

THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1853.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. I. *Observations upon Chronic Rheumatic Arthritis of the Shoulder.* By ROBERT W. SMITH, M.D., M.R.I.A., Professor of Surgery in the University of Dublin; Surgeon to the Richmond Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Secretary to the Pathological Society of Dublin, &c. &c.

IN the month of April, 1852, I exhibited, at a meeting of the Pathological Society of Dublin, the shoulder-joints of a man about sixty years of age, each of which presented an example of congenital luxation of the head of the humerus backwards upon the dorsum of the scapula, and in which chronic rheumatic arthritis had been established. In the following pages I purpose, in the first place, to give a description of these very remarkable specimens, and afterwards to analyze the cases which, under various appellations, have been, from time to time, recorded as examples of injuries of the shoulder-joint from external violence, but which, in my opinion, are rather to be looked upon as instances of the effects of chronic rheumatic arthritis.

With respect to the first part of the subject, it will be sufficient to give a detailed account of one of the articulations, so closely did they resemble each other, both in external configuration and in anatomical characters.

Upon the right side, the head of the humerus, placed much farther back than natural, and elevated so as to be in contact with the under surface of the acromion process, formed upon the dorsal region of the scapula a conspicuous tumour, which moved with the shaft of the bone. The acromion and coracoid processes, more especially the latter, were unusually prominent. The shoulder was flattened anteriorly, and the axis of the humerus passed somewhat inwards.

Upon removing the deltoid muscle, and laying open the capsular ligament, it was found that no articular surface existed in the normal situation of the glenoid cavity; but upon the external aspect of the neck of the scapula[a], there had been formed a glenoid-shaped, concave surface, for the reception of the head of the humerus. It measured two inches and a quarter in its vertical, and one inch and three-quarters in its transverse, diameter; totally destitute of cartilage, it was covered by a texture as hard and dense as enamel, and as smooth as polished ivory. A glenoid ligament, much broader than natural, surrounded the greater part of its margin; it adhered intimately to the capsular ligament, but had become in several places detached from the circumference of the socket.

The tendon of the biceps muscle arose from the summit of the articular cavity; there was no interruption of continuity in any part of its course, but its intra-articular portion was remarkably short; it passed from its origin almost at once to the bicipital groove. At the point where it arose, however, from the glenoid cavity, its texture was unravelled, and its fibres separated from one another.

The acromion process, about an inch from its anterior extremity, was divided into two portions; the detached fragment rested upon the summit of the great tuberosity, and the solution of continuity corresponded to the sulcus which separates the tubercle from the head of the humerus. There was no deposition of bone along the line of separation, nor displacement of the detached portion, which was closely connected with the remainder of the process by the fibrous tissues derived from the muscles which are here attached.

The head of the humerus had lost completely the globular form which it possesses in the normal state; it was flattened from within outwards, and its axis appeared continuous with that of the shaft of the bone; its inferior border was prolonged downwards, so as to conceal a portion of the anatomical neck of the humerus, between which and the elongated margin of the head there existed a deep sulcus or fissure, which was

[a] See Plate I. Fig. 1.

Plate 1.

Fig 1.

Fig 2.

Fig 5.

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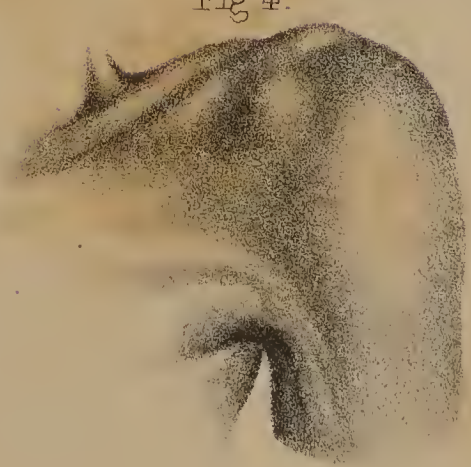
Fig 3.

Fig 4.



occupied by vascular productions from the synovial membrane. The articular surface, the outline of which had become quadrilateral, was fully an inch broader than the socket in which it moved, and was smooth and polished to the same extent as the glenoid cavity. The lesser tuberosity was enlarged, and had become articular, and irregular osseous growths surrounded the head of the bone.

The tendons of the capsular muscles were perfect, with the exception of that of the subscapularis, the attachment of which to the rough and scabrous lesser tubercle had, to a certain extent, disappeared. The capsular ligament was somewhat thicker than natural.

Upon the left side the condition of the articulation was similar to that just described as existing upon the right. In the form, situation, extent, and polish of the glenoid cavity[a]; in the broad and partially detached glenoid ligament; in the unravelled condition of the tendon of the biceps at its origin; in the enlargement, flattening, and polish of the head of the humerus; its elevation to the acromion process; the nodulated state of its circumference; its prolongation downwards;—in all these respects there existed a perfect similarity between the two articulations. There was also upon both sides an osseous growth from the margins of the bicipital grooves, by which their depth was increased. Upon the left side, however, the acromion process was perfect, but the surface for articulation with the clavicle was enlarged. Upon this side, also, osseous depositions had taken place in the capsular ligament, near its attachment to the inner margin of the glenoid cavity.

It must, I think, be obvious to those acquainted with the external signs and anatomical characters of congenital luxations of the shoulder backwards, and who are also familiar with the morbid appearances which chronic rheumatic arthritis presents when established in this articulation,—that in these remarkable specimens two distinct classes of phenomena existed: the one manifestly indicating original malformation; the other as clearly denoting the super-addition of a disease of a peculiar character. To the former belong the absence of any vestige of a glenoid cavity ever having existed in the situation which it naturally occupies; the accurate resemblance to one another of the abnormal sockets in position, shape, and dimensions; the shortness of the intra-articular portions of the bicipital tendons, and the existence of glenoid ligaments. These phenomena indicate, in my opinion, that the deformities originated neither in disease nor accident; and when I compare them with those

[a] See Plate I. Fig. 2.

observed in the case of double, congenital, sub-acromial luxation, described in my work on Fractures[a], I feel more strongly convinced that, in the rare and remarkable case just described, the malformations were also congenital.

Among the appearances which demonstrate that chronic arthritis had long existed in each of these malformed joints, are to be placed;—the removal of the articular cartilages; the enamelling of the osseous surfaces thus exposed; the bony growths around the bases of the heads of the humeri; the deposition of bone in the capsule; the unravelling of the fibres of the bicipital tendons; the growth of the numerous vascular bunches of synovial fimbriæ; and the solution of continuity in the acromion process.

In confirmation of this view of the case, it may be mentioned, that in the body of the person in whom these specimens were found, all the fingers and toes were webbed, and that one of the hip-joints presented a well-marked example of chronic rheumatic arthritis, evidenced by the disappearance of the ligamentum teres, the removal of the articular cartilage, the existence of an ivory-like deposit, and, finally, shortening of the neck of the femur, and an alteration in the angle which it naturally forms with the shaft.

The only specimens with which I am acquainted, similar to those above described, are contained in the Museum of St. Bartholomew's Hospital. In his valuable memoir upon the "Abnormal Conditions of the Shoulder-joint[b]", Mr. Adams has thus alluded to these preparations: "Finally, the head of the humerus may be not only displaced partially upwards, as the result of this chronic rheumatic disease, partially inwards, and, as we have just proved, also partially downwards, but the most remarkable abnormal appearances the writer has witnessed from this chronic disease have been, in two specimens, contained in the Museum of St. Bartholomew's Hospital, in which it will be found that the head of the humerus, which had been affected by this chronic disease, was thrown completely backwards on the dorsum of the scapula. In this case the displacement was double, and two new glenoid cavities had been formed for the reception of the enlarged heads of the humeri, beneath the bases of the spines of the scapulæ, just where the head of the humerus has been found to rest in the ordinary dislocation backwards from accident; but in this case, although the history was unknown, that these appearances were not the result of accident is almost certain, as similar abnormal appearances are observable on each side." The notice of this preparation in the Catalogue of the

[a] Treatise on Fractures in the Vicinity of Joints, p. 206.

[b] Todd's Cyclopædia.

Museum is as follows[a]: "The bones of both the shoulder-joints of an adult. In each joint there has been ulceration, or such absorption as occurs in chronic rheumatism of the articular surface of the head of the humerus, and the glenoid cavity. The heads of the humeri are flattened and enlarged by growths of bone around their borders; and the glenoid cavities, enlarged in a corresponding degree, and deepened, extend backwards and inwards to the bases of the spines of the scapulæ. The articular surfaces, thus enlarged, are mutually adapted, and are hardened, perforated, and, in some parts, polished and ivory-like. The changes of structure are symmetrical, except in that the articular surfaces of the right shoulder-joint are more extensively polished than those of the left."

Although I have never had an opportunity of examining these preparations, I am, nevertheless, convinced, that they are not to be considered simply as examples of displacement of the heads of the humeri backwards, produced by the ravages of chronic rheumatic arthritis, but that they should rather be looked upon as instances of the supervention of this disease in a case of double congenital luxation of the shoulder backwards. It is true that when Mr. Adams, who is so well acquainted with this rheumatic disease, examined the preparations in question, they did not strike him in this point of view; but now that he has seen those which are in my possession, he feels perfectly satisfied, he has assured me, that the two cases are identical in their nature, and that they both present examples of the two-fold lesion that I have mentioned. The occurrence, therefore, of displacement of the head of the humerus backwards, as a result of chronic rheumatic arthritis, remains to be demonstrated.

I shall now direct attention to the displacement upwards, which is so frequently seen as a consequence of this disease; and, in doing so, it will be necessary to notice, analytically, the cases which have been from time to time recorded as examples of the effects of injuries upon the component parts of the shoulder-joint; but which, in my opinion, are to be looked upon as resulting from chronic rheumatic arthritis. It is true, that many of them were published at a period when but little was known of this remarkable affection; their authors are, therefore, to a certain extent excusable for having fallen into error respecting the nature of the morbid appearances which they have described; but it is also true that very many have been recently placed upon record, although we now possess full information respecting the symptoms, diagnosis, and patho-

[a] Page 108–32.

logy of chronic rheumatic arthritis, no matter in what articulation it may be seated. In proof of this statement, it is only necessary to refer to the various memoirs upon the abnormal conditions of the joints published by Mr. Adams in Todd's Cyclopædia, and to the numerous communications upon the subject which have been made to the Pathological Society of Dublin, and which are to be found recorded in the volumes of this Journal.

The most remarkable series of specimens, illustrative of the subject under consideration, is that published by Mr. John Gregory Smith in the fourteenth volume of the London Medical Gazette. He has there described the appearances observed in seven shoulder-joints, supposed to have suffered from severe injuries. The previous history of the different cases was unknown,—all the specimens having been found in bodies brought to the Hunterian Theatre of Anatomy. The following abstract from the author's account of this valuable series will suffice for my present purpose:—

No. 1.—The subdeltoid bursa was found to communicate with the general cavity of the shoulder-joint by a large irregular opening in the capsular ligament. The tendinous insertions of the subscapularis, supraspinatus, infraspinatus, and teres minor muscles, were detached from the tubercles of the humerus. The tendon of the long head of the biceps had been *torn* away from the upper part of the glenoid cavity, and entirely withdrawn from the joint; it was found to be firmly attached to the anterior margin of the bicipital groove; the size of the cavity of the joint was much increased. A small portion of the outer margin of the glenoid cavity had been *fractured* off, and with the under surface of the acromion process and the tubercles of the humerus, were partially covered with portions of enamel-like or porcelain secretion, and numerous bands of organized fibro-ligamentous substance extended across the cavity of the joint in different directions.

No. 2.—The subdeltoid bursa communicated, by a large opening in the capsule, with the interior of the joint, and the tendon of the subscapularis was partially *torn* from the lesser tubercle of the humerus. The tendon of the long head of the biceps was *ruptured*, leaving a portion, about half an inch in length, attached to the upper part of the glenoid cavity; the lower portion of the tendon had been drawn from the cavity of the joint, and lay firmly attached to the margin of the bicipital groove. The *ruptured* extremities of the tendon were perfectly smooth and rounded, and the superior portion had become much flattened.

No. 3.—On removing the deltoid muscle, the head of the

humerus came into view, presenting a larger surface of bone than usual. On further examination, it was found that the tendon of the subscapularis muscle had been partially *torn* away from the lesser tubercle, and the original insertions of the supraspinatus, infraspinatus, and teres minor muscles, had been completely separated from the greater tubercle. The tendon of the long head of the biceps had also been *torn* from its origin, and become attached to the upper part of the bicipital groove.

The under surface of the acromion process was found hardened by the friction of the head of the humerus, and covered by a peculiar enamel-like secretion.

Nos. 4 and 5.—These specimens were found in the body of a female aged 56. In the right shoulder, a jagged, irregular opening, as large as a half-crown, existed in the capsular ligament, so that the subdeltoid bursa communicated with the general cavity of the joint. The tendons of the subscapularis and supraspinatus muscles, *torn* from their respective tubercles, had become united with the capsule; the tendon of the biceps, *torn* from the glenoid cavity and withdrawn from the joint, was fixed firmly to the margin of the bicipital groove. There was a number of small osseous growths connected with the tubercles of the humerus, and an ivory-like deposit covered both them and the under surface of the acromion. A *fracture* of this process had separated about an inch of its expanded extremity; it had not united by bone.

In the left shoulder, similar conditions were observed, viz., the opening in the capsular ligament; the separation of the tendons of the supraspinatus and subscapularis muscles; the deficiency of the intra-articular portion of the tendon of the biceps; the adhesion of the remainder of the tendon to the groove of the humerus; the osseous growths upon the tubercles; the ivory-like deposit; and finally, the solution of continuity in the extremity of the acromion process.

Nos. 6 and 7.—Here, also, both articulations were similarly altered. In that of the right side, an irregular opening existed in the capsular ligament, and the tendons of the supraspinatus and subscapular muscles were separated from their tubercles. That of the long head of the biceps remained connected with the glenoid cavity, but was displaced towards the inner part of the joint; it was expanded, and appeared to have been subjected to pressure and friction; the surface which corresponded to the head of the bone was smooth, but the other presented a bundle of silvery cords, which could be spread out upon the finger three-quarters of an inch in width. The capsule had become so large as to allow of the head of the humerus being placed

under the coracoid process. There were small bony deposits about the tubercles, and here and there patches of ivory deposit.

In the left shoulder the capsule was entire, but was greatly increased in size and thickness. The tendon of the subscapularis was *torn* from the lesser tubercle, but the attachments of the other capsular muscles were preserved; the tendons, however, appeared to have been very much stretched. The tendon of the biceps was displaced towards the inner and lower part of the joint, and played over a smooth part of the lesser tubercle.

It would be difficult to lay before the reader any more striking examples of the anatomical characters of chronic rheumatic arthritis of the shoulder than those furnished by the preceding group of cases, gratuitously described by the author (for their history was unknown) as instances of the effects of accidental violence. The absorption of a portion of the capsule; the detachment of the tendons of the capsular muscles from the tubercles of the humerus; the separation of the acromion into two portions; the ivory-like deposit upon the surfaces of the bones; the loss of the tendon of the biceps; its adhesion to the bicipital groove; its separation into distinct fibres; its displacement inwards from the summit of the humerus; the osseous nodules about the tubercles; the conversion of these processes into articular surfaces; the enlargement of the capsule; the deposition of bone in the capsule, at the margin of the glenoid cavity (described by the author as a fracture); the symmetrical development of the disease—all these well-known results of chronic rheumatic arthritis upon the structures of the shoulder-joint are elucidated in the clearest manner, by the series of specimens (valuable and instructive as far as they speak for themselves) described by Mr. John Gregory Smith.

According to this gentleman, however, the preceding cases furnish examples of every known luxation of the shoulder, as appears from the following extracts from his observations:

"It is likely that the first case was an example of the effects that may be expected to follow the dislocation into the axilla, with the addition of a rupture from its origin, of the round tendon of the biceps muscle.

"The second case is probably one showing the effects of a partial dislocation, in which the head of the humerus is drawn forwards against the coracoid process of the scapula, but quickly slips back again into its natural socket. It is an example of a rupture of the round tendon of the biceps muscle, instead of the tendon being torn away from its origin.

"The third case, I am inclined to think, has been a dislo-

cation *into the axilla or on the dorsum of the scapula.*" It is difficult to imagine what resemblance could exist between the effects of these two opposite luxations, or how, in the case of that on the dorsum of the scapula, the tendons of *all* the capsular muscles, as well as that of the biceps, could have been torn from their attachments. In this rare displacement of the head of the humerus, the tendons of the infraspinatus and teres minor are relaxed, and in the dissection of this accident recorded by Sir A. Cooper, those of the supraspinatus and of the biceps were on the stretch, but not torn.

"The fourth and fifth cases occurred in the same individual." "I am inclined to think it probable that they are both examples of the dislocation upwards." "They would seem to have been produced at the same time."

"The sixth and seventh cases likewise occurred in the same subject. The appearances in the right shoulder, I think, clearly indicate that it is an example of the effects of a dislocation under the pectoral muscle. The appearances of the left shoulder result, perhaps, from a dislocation under the pectoral muscle or into the axilla."

When we consider the fertility of imagination displayed in the preceding extracts, it certainly appears strange, that with regard to the fourth and fifth specimens, as well as the sixth and seventh, the mere circumstance of the morbid appearances in one shoulder-joint being "nearly a counterpart" of those in the other, did not strike the author as constituting strong presumptive evidence of their having originated in disease, for symmetry is as frequent in diseases and original malformations as it is rare in injuries from external violence; and this observation holds good in an especial manner, as regards chronic rheumatic arthritis, wherever situated. It is difficult, indeed, to conceive how external violence could either rupture or dislocate the tendon of the biceps in both shoulders at the same time.

In the last edition of his valuable work on Surgery, Professor Fergusson, of London, has made some observations upon partial luxations of the shoulder upwards from external violence, which I deem it right, upon the present occasion, to give in full; and as I am of opinion that he has not given the true explanation of the phenomena which he has described, I shall devote some space to their consideration; for it is obvious that the promulgation of an erroneous doctrine is the more calculated to mislead, and therefore the more dangerous, the higher the authority from which it emanates. It need scarcely be said that I have no desire to undervalue the labours of one who has worked so efficiently to advance our knowledge of surgery as

the distinguished Professor of King's College, but truth compels me to say that, *as far as his published writings can guide us* in forming an opinion, he does not appear to be familiar with the symptoms and anatomical characters of that remarkable disease of the shoulder, which is so well known here by the name of "Chronic Rheumatic Arthritis," and which, in other countries, has proved itself so fruitful a source of errors in diagnosis.

"It is customary," says Professor Fergusson, "to suppose that the head of the humerus cannot be luxated directly upward; but I have long been of opinion that such an event, to a partial extent, may, and indeed does, occur pretty frequently. I have met with various examples in the dissecting-rooms, in which the end of the bone has been in close contact with the acromion process and spine of the scapula, or with the coraco-acromial ligament; lying, in the one instance, a little above and behind the upper part of the glenoid cavity; in the other, somewhat above and in front, between the natural articular surface and the coracoid process; both, however, coming strictly under the title of partial luxation upwards. Whether these effects were the result of immediate violence, or of gradual change, I cannot decide. The capsular ligament seemed entire, but elongated, in some of the examples, whilst in others the articular surface of the humerus was in contact with the parts above, the capsular ligament being attached to the surrounding textures, which, thickened and infiltrated with lymph, bore all the marks of former inflammation. Within these few years, the occurrence of rupture of the long head of the biceps has been noticed by Mr. Stanley, Dr. Knox, and others; and Mr. John Soden, Jun., of Bath, has related[a] the particulars of a case of supposed sprain in the shoulder, which dissection afterwards proved to be a partial displacement of the humerus upwards, and luxation of this tendon forwards on the lesser tuberosity. That this tendon is displaced in the luxation forwards or backwards (or perhaps, to speak more correctly, that the head of the bone in such instances is displaced from the tendon), there can be little doubt; I have seen the change more than once in the dissecting-room. In some shoulders, I have found the tendon partially torn and elongated, lying either in the natural groove, or in a new one formed by friction; in others, I have observed the tendon torn across about an inch from its upper extremity, which floated free within the capsule, whilst the other end was adherent to the groove between the tuberosities. In some of them, old unreduced luxa-

[a] Transactions of the Medical and Chirurgical Society, 1841.

tions existed; in others, every mark bore evidence that this injury had at one time occurred. There is now in my collection, in the Museum of King's College, a preparation strongly corroborative of the above observations. On a subject, I noticed that one shoulder was more prominent than the other, and, in the progress of the dissection, the head of the humerus was found lying immediately under the deltoid muscle, in contact with the acromion, and surrounded by a very thin capsule of cellular texture. On raising the head of the bone, it was ascertained that the long tendon of the biceps was torn, the under end being adherent in its natural groove, and that, in addition, a dislocation of the head of the humerus (forwards, in all probability) had been in a manner reduced; but, instead of passing again into the capsule, had been thrust between this texture and the deltoid muscle. Only a small portion of the glenoid cavity was visible at its lowermost point, the greater part being covered by the flattened capsule. Doubtless, in this case, the original opening in the ligament had been only sufficient to let the head of the bone escape, and not free enough to permit of proper reduction"[a].

It must be manifest to every person who reads, even in a cursory manner, the preceding extract from the recently published work of this justly distinguished surgeon, that no evidence whatever of any description has been adduced to prove the occurrence of partial luxation of the head of the humerus as the result of accident or external violence. The opinion which the author has advanced, viz., that this is an event of pretty frequent occurrence, is evidently grounded upon the phenomena which he has observed in shoulder-joints found in the dissecting-room, and with the previous history of which he was unacquainted. In the remarks which he has made upon the subject, he has, unknowingly, described many of the leading features of chronic rheumatic arthritis of the shoulder, although he looks upon them as resulting from accident: indeed this generally happens whenever a specimen, such as that to which he alludes as being preserved in the Museum of King's College, is found in the dissecting-room by those unacquainted with the pathological characters of this disease.

In the instance mentioned by Professor Fergusson, as one of partial luxation upwards from accident, there existed the following evidences, showing that chronic rheumatic arthritis had long been established in the articulation, viz.: the aperture in the capsular ligament; the contact of the head of the humerus with the deltoid muscle, and with the acromion pro-

[a] Practice of Surgery, p. 252, 1852.

cess; the disappearance of the intra-articular portion of the tendon of the biceps, and the adhesion of the remainder of it to the bicipital groove. In endeavouring to explain these phenomena, as well as the concealment of the glenoid cavity by the capsule, the author has evidently experienced some difficulty: for he has been obliged to have recourse to the hypothesis, that a dislocation of the head of the humerus forwards had occurred, and had been imperfectly reduced; and that, owing to the original aperture in the capsular ligament not having been free enough to permit the return of the head of the bone (although sufficient to allow it to escape), this latter had, in the efforts made to accomplish the reduction, been pushed up between the capsule and the deltoid muscle.

Upon the insufficiency of this explanation, it is scarcely necessary to make any remark, as the author himself seems to be aware of it, for he adds, "such an occurrence I believe to be exceedingly rare, almost all evidence going to prove that the capsular ligament is in general so extensively torn open, that the head of the bone cannot possibly be obstructed by it in its backward course; yet the preparation confirms the opinion of Delpech, who, though he suspected such an occurrence, had himself met with no anatomical proof of the fact." It might, I imagine, be safely added, neither has any one else.

The following account of a specimen of chronic rheumatic arthritis of the shoulder-joint, which is in my own collection, will, I think, illustrate the true nature of that described by Professor Fergusson. It was taken from the body of a woman of advanced age, who for many years before her death suffered from the usual symptoms of this disease, and who, it was known, had never sustained any injury of the shoulder.

Upon removing the deltoid muscle, the naked head of the humerus, elevated to the acromion process, came into view; the centre of its summit was devoid of cartilage over a space as large as a shilling, and covered with ivory-like deposit. An aperture of a circular form, with a fringed margin, and so large as to have permitted of the exit of the entire of the head of the humerus, existed in the upper and anterior part of the capsular ligament, the attachment of which to that portion of the anatomical neck of the bone, which lies above the greater tubercle, had disappeared; the tuberosity thus became articular; it was covered with ivory-like deposit, and in certain motions of the joint played against the under surface of the acromion; the sulcus which in the normal state separates it from the articular surface of the head of the bone was obliterated. The remains of the upper portion of the capsule, or that part of it which is related to the tendon of the supra-

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Plate 2.

Fig 1.

spinatus muscle, was compressed, and, as it were, folded on itself between the upper portion of the glenoid cavity and the posterior inferior region of the elevated head of the humerus. The tendons of the four capsular muscles had lost their attachments to the tubercles, the lesser of which processes had become nodulated, and so much enlarged as to have obliterated that portion of the bicipital groove, of which, in the normal state, it forms the internal boundary. The intra-articular portion of the tendon of the biceps had nearly altogether disappeared; about a quarter of an inch of it, however, still remained connected to the glenoid ligament; its extremity was smooth and rounded off, like that of the bone of a stump; it was larger than natural, and, along with the corresponding portion of the glenoid ligament (which was loosened from its attachment), was laid down, as it were, upon the upper part of the glenoid cavity, between which and the head of the humerus (with the intervention of the capsule), it was compressed. The lower portion of the tendon was adherent to the inferior part of the bicipital groove, and to the remains of the neighbouring portion of the capsular ligament.

The acromion, about three-quarters of an inch from its extremity, was divided into two portions, which were held together solely by the fibrous structure which invests the upper surface of the process; but this tissue was so much stretched, that the detached portion was separated from the remainder of the acromion by an interval of three-quarters of an inch. The under surface of the entire process was denuded of periosteum and covered with an ivory-like structure, which was also found investing the articular surfaces of the acromio-clavicular joint. The lower part of the glenoid cavity (which was still covered with cartilage) was completely abandoned by the head of the humerus. The remainder of the socket presented the appearance of ivory, which manifestly must have been established before the head of the bone had perforated the capsule[a].

The resemblance which this case bears to that detailed by Professor Fergusson cannot fail to strike the reader. In each he will remark the elevation of the head of the humerus; its contact with the inferior surface of the acromion process; the deficiency in the capsular ligament, in consequence of which the head of the bone was found lying immediately under the deltoid muscle; the adhesion of the tendon of the biceps to the bicipital grove; the disappearance of its intracapsular portion, and the interposition of the capsule between the upper part of the glenoid cavity and the head of the humerus. We

[a] See Plate II.

must, therefore, refer them to the same category, and as the one was known to have been a case of chronic rheumatic arthritis, uncomplicated with injury, and as the history of the other was totally unknown, it appears to me that we cannot avoid looking upon Professor Fergusson's specimen as a well-marked example of that disease.

In the fifth volume of Guy's Hospital Reports Mr. Hilton has published a case of dislocation of the right humerus into the axilla, with an account of the dissection of the parts, thirteen weeks after the accident. The injury was caused by the falling of a load of gravel upon the man while at work in a stooping position. When he had been extricated, his left femur, and some of his ribs, were found to be broken, and his right humerus dislocated into the axilla. The luxation was easily reduced, but great difficulty was subsequently experienced in maintaining the head of the bone in its proper position. The patient died of disease of the chest thirteen weeks after the accident.

The external form of the joint resembled very much the configuration of a shoulder which had been the subject of ulceration, or rupture of the tendon of the long head of the biceps, or what is termed the partial dislocation inwards of the humerus. The rotundity of the shoulder was diminished, as compared with that of the opposite side; the acromion and coracoid processes were very distinct; the head of the humerus was elevated to the acromion; the posterior surface of the joint flattened, and the deltoid muscle atrophied.

On dividing the attenuated deltoid transversely, and retroverting it, the head of the humerus was immediately brought into view, uncovered by its capsule, and without its greater tubercle, which had been broken off. A portion of the capsule, with the greater tubercle of the humerus attached to it, was found interposed between the articular surfaces of the humerus and the scapula. Two considerable openings existed in the capsule. The upper, somewhat circular in outline, was nearly an inch in diameter, and its edges were much thinned and well-defined; this opening corresponded with the surface of extreme pressure between the humerus and scapula. The lower opening was opposite the inferior edge of the glenoid cavity; it was angular in outline, and its edges were thick and irregular. Through this opening the head of the humerus escaped at the time of the accident.

The greater tubercle of the humerus had become retracted by its muscles with the capsular ligament, towards the outer part of the glenoid cavity. The tendon of the long head of the biceps had been separated from its origin at the scapula,

and divided vertically into two portions; one of them had become fixed to the inner edge of the bicipital groove; the other had acquired an adhesion to the tubercle of the humerus in its new position, and encircled the outer half of the neck of the humerus.

To any one who reflects for a moment upon the description given by the author of this interesting case, it must be apparent that two classes of phenomena existed, distinct in their nature, and originating in causes essentially different; one, produced by the injury which occurred thirteen weeks before the death of the patient; the other, resulting from the pre-existence of chronic rheumatic arthritis.

The results of the recent injury were, the angular rent in the lower part of the capsule, through which the head of the bone had passed into the axilla; the fracture of the greater tubercle of the humerus, and the interposition of the capsule between the articular surfaces of the humerus and scapula; while to the effects of pre-existing disease are to be ascribed—the circular aperture in the upper part of the capsule; the detachment of the tendon of the biceps from the glenoid cavity; its adhesion to the bicipital groove and adjoining portion of the tuberosity; the disappearance of its intra-articular portion; and the contact of the head of the bone with the deltoid muscle, and with the acromion and coracoid processes and coraco-acromial ligament.

The splitting of the remains of the tendon of the biceps was, I conceive, an effect of the injury; the broken tubercle, retracted by the muscles attached to it, drawing forcibly with it that portion of the tendon which previous disease had rendered adherent to it, where it forms the outer margin of the bicipital groove. It is obvious that the circular aperture in the upper part of the capsule could not have been the result of absorption from pressure exercised upon it *after* the receipt of the injury; for it is distinctly mentioned that great difficulty was experienced in maintaining the head of the bone in its natural position; that it had a constant disposition to fall again into the axilla, almost by its own weight; and that the action of three of the capsular muscles was annulled by the fracture of the greater tubercle. Under these circumstances, it is impossible to believe, with the author, that "the pressure of the humerus upon the capsular ligament had induced its progressive attenuation and absorption," *after* the receipt of the injury. The case must, therefore, in my opinion, be considered as an example of dislocation and fracture occurring in a joint previously the seat of chronic rheumatic arthritis.

In the first volume of the Lancet for the year 1845, Mr.

Alfred Smee has given the particulars of the dissection of a case of partial dislocation of the shoulder upwards; the specimen was found in a body brought to the Aldersgate School of Medicine. He describes the upper part of the greater tubercle of the humerus as having been converted into an articular surface, which corresponded to another smooth surface, formed, partly on the inferior aspect of the acromion, and partly by new bony matter, extending about half an inch into what he terms the *tendon* of the deltoid muscle. The tendons of the supraspinatus and infraspinatus, together with the adjoining portions of the capsule, were *torn* from the tuberosity. The tendon of the biceps was *ruptured*, and the lower portion adhered firmly to the bicipital groove. He also alludes to the presence of several tendinous bands, which he considers to be a new formation, and destined to strengthen the capsule.

"From the above dissection," the author observes, "we are in a condition to infer the nature of the *accident* at the time of its occurrence, and it is apparent that the tendons of the spinati and capsular ligament were *torn* from the tuberosity, and the tendon of the *biceps* ruptured." This mode of dealing with the question will scarcely, be deemed satisfactory by those who have carefully studied the diseases of the shoulder-joint; for, in the deficiency of the capsule, the detachment of the capsular tendons, the adhesion of the remains of that of the biceps to the groove of the humerus, the conversion of the greater tubercle into an articular surface continuous with that of the head of the bone and in contact with the acromion, they will not fail to recognise the familiar features of chronic rheumatic arthritis of the shoulder. Nor can I avoid expressing my conviction, that the bony matter, which the author has spoken of as extending from the acromion into the *tendon* of the deltoid, and as forming part of the surface which articulated with the greater tubercle, was not in reality a new formation, but the detached extremity of the acromion, that process being traversed by the usual solution of continuity, with which we are now so well acquainted as one of the anatomical characters of the disease under consideration, but which we may conclude Mr. Alfred Smee to have been totally ignorant of, when he published the preceding case.

As to the tendinous bands observed in the capsule, had the author been acquainted with the morbid appearances noticed in the advanced stages of chronic rheumatic arthritis of the shoulder, he would have known that they were, in reality, the unravelled fibres of the capsular tendons.

(*To be continued.*)

Art. II.—*On the Treatment of Fractures of the Femur by a Simple Modification of Liston's Splint; with Observations on Re-fracture of the Bone in Cases of Deformity.* By Richard G. H. Butcher, F. R. C. S. I., Examiner on Anatomy and Physiology in the Royal College of Surgeons in Ireland, Surgeon to Mercer's Hospital, &c. &c.

When writing "On the Treatment of Fractures in the vicinity of the Ankle-Joint," the remarks upon which I published in the February Number of this Journal for 1852, and continued in the May Number of the same year, I quoted from the Cyclopædia of Practical Surgery, edited by Costello, a remarkable passage which instigated me to the task. I find again, at page 239 of the work referred to, the following striking observations:—

"In the extensive field of surgery there are not many departments in which our noble art is capable of conferring greater or more frequent benefits on humanity, than in that which relates to fractures. In cases of every day's occurrence, well-directed art will restore its natural strength, and form, and functions, to a fractured bone, which ignorance or unaided nature would have shortened and deformed; with the harmony between the moving powers and the joints so broken, by the change of the relative situations of the muscles and bones, as greatly to impair the usefulness of an entire limb." And "there is no class of cases in surgery which requires more anatomical knowledge, nicer experience, and judgment (medically and surgically), or greater dexterity of manipulation, than that of fractures." If these statements be correct, which few I think will deny, to no special form of fracture are they more applicable than to the varieties involving the thigh bone, about which so much has been written, and in reference to the treatment of which such discrepancy still prevails. If any additional proof were wanting to verify this assertion, it is afforded by the number of splints invented to accomplish a permanent and perfect consolidation of the broken bone. My object in the present paper is to show how efficiently the most unpromising forms of fracture of the thigh bone, *no matter in what part of it occurring*, can be treated by the simple modification of Liston's splint which I am in the habit of using.

Some of the cases which I adduce are replete with interest, and have been selected from amongst many, to illustrate the mode of treatment advocated, that plan which, if carefully pursued, will restore the member to all its usefulness and per-

fection in progression. To attract the eye of the practical surgeon, I shall first give a list of the cases treated, in order that their serious character may arrest attention and prove a sufficient guarantee that the test has been sufficiently searching. I shall next narrate the history, treatment, and result of each case, and afterwards make such observations as the localized peculiar symptoms characterizing some of them suggest; and lastly, I will describe the mechanical means employed, the advantages and mode of adjustment.

CASES DETAILED.

I. Fracture of the femur below the lesser trochanter united with shortening and great deformity; re-fractured thirty days after the accident.

II. Fracture of the femur below the lesser trochanter.

III. Fracture of the femur, partly within and partly without the capsule.

IV. Oblique fracture of the femur about its centre.

V. Oblique fracture of the femur through the great trochanter.

VI. Oblique fracture of the femur below its centre.

VII. Fracture of the femur external to the capsule.

VIII. Oblique fracture of the femur close to the knee-joint.

IX. Fracture of the femur through the great trochanter, nearly transverse.

Case I.—*Fracture of the Femur below the Lesser Trochanter, with shortening and great deformity; Re-fractured thirty days after the accident.*

John Toole, aged 19 years, a healthy-looking young man from the country, was admitted into Mercer's Hospital, October 16, 1849, labouring under great deformity and shortening of the left thigh, the result of fracture. The appearance of the limb on his admission is faithfully preserved by a fine cast in my collection, and from which the accompanying drawing (Plate I. fig. 1) is taken,—the amount of shortening and the characteristic deformity presently to be described are faithfully represented. The history of the case is as follows:—Twenty-six days before presenting himself at the hospital, he was working in a sand-pit, when the bank suddenly fell in upon him, breaking his right fore-arm near the wrist, and his left thigh below the lesser trochanter. He was soon after seen by a medical gentleman, who did all that was requisite; placed the limb in position, and supported it with splints. The patient, candidly enough, admits he never attended to the directions of his medical advi-

Plate I.

Fig 1

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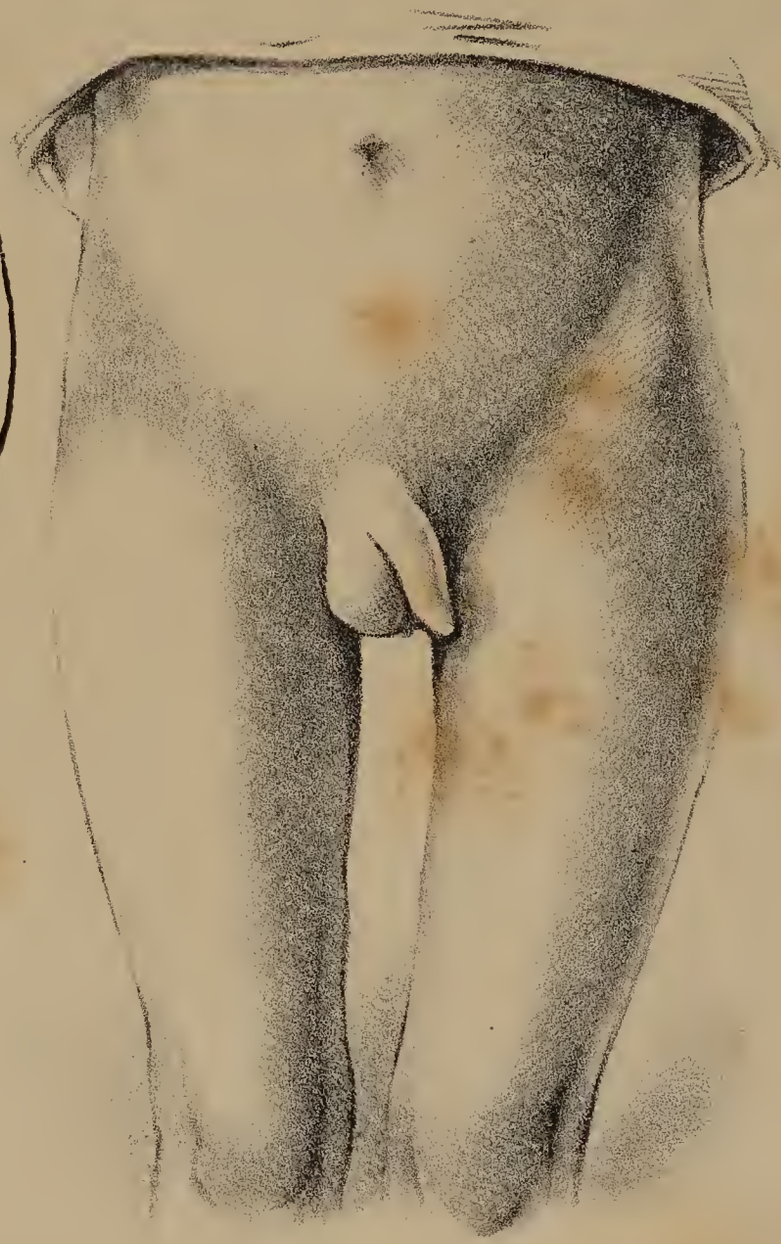
Fig. 2



ser, but moved the limb about according to his inclination, laying it sometimes on the outside, sometimes supported on pillows forming a double inclined plane, and thus it was subjected to frequent disturbance; nevertheless, union went on rapidly as usual at this period of life,—the more quickly consummating the deformity. By a reference to the engraving it will be seen that the outline of the limb was very remarkable, and formed a considerable arch, embracing in its most prominent part a point a little above the junction of the upper and middle thirds of the thigh, the convexity being directed upwards and backwards; by a careful measurement the thigh bone shows a diminution in its length of somewhat more than five inches as contrasted with the uninjured one. From an attentive consideration of the deformity so strikingly present here, it must be conceded that the lower fragment was drawn upwards, outwards, and backwards, and that the upper also, instead of being inclined forwards and inwards, likewise tended in the same direction, probably owing to the manner in which the force was applied, and the course of the solution of continuity in the bone,—the amount of shortening and the mass of callus thrown out may be fairly ascribed to the obliquity of the fracture. The union between the ends of the broken bone was so firm that the patient could sustain the entire weight of the body upon the limb; and the connecting medium between the broken bones of the fore-arm was quite solid.

Being made aware of the history of the case, the next point to be taken into consideration was, how far surgical interference was likely to benefit the sufferer's condition. The most prominent features of the case, viz.: the age of the patient, the totally useless condition of the member as an organ of locomotion, the length of time the fragments were permitted to grow together in their distorted relationship, and the solidity of the bond of union established, were all maturely weighed, when it was deemed advisable to re-fracture the bone.

On the morning of the 22nd the patient was brought into the operating theatre, and placed lying upon his back on a table, between the posts used for reducing dislocations; a counter-extending belt was then passed under the perineum on the affected side, and its ends fastened to the chain of one post; while a jack-towel, embracing with the clove-hitch the lower extremity of the femur, just above the knee, was connected with the pulleys attached to the other. Chloroform was administered in the usual way, sprinkled upon a warm towel, and its effects rapidly produced; extension was then gradually put in force, and the muscles strained to the extreme of tension; the

limb at the site of the fracture was forcibly moved up and down, and partly rotated, so as to help to break through the uniting callus; by degrees the connecting bond yielded, and after extension was kept up for twenty minutes the curve gradually disappeared, and the limb was brought down to its full length; this being accomplished, Boyer's splint was applied, which maintained fully the required extension. The patient was then carried back to the ward and placed upon a fracture bed covered with a hair mattrass. 3, P. M. Not suffering much pain; administered half a grain of morphia. 9, P. M. No pain; to have the morphia repeated.

October 23rd.—The patient slept through the night, and complains of no unpleasant symptoms; ordered four grains of calomel, and afterwards a saline aperient.

24th. Increased the extension by a few turns of the windlass attached to the end of the splint. To have an opiate at night.

26th. Complains of the foot being sorely hurt by the pressure of the shoe and foot-board; this, however, might be obviated, but there is a greater fault in the splint,—it does not steady the upper fragment sufficiently, being too short to confine the trunk. For these reasons I removed Boyer's apparatus and applied Liston's splint, preserving its full length, and with the utmost precautions against pressure from the perineal belt, and at the ankle. When the limb was so adjusted, the patient expressed himself as much relieved.

November 2nd. Not necessary to remove the splint since last report; the limb holds its full length.

9th. Readjusted the splint, and placed an additional pad externally between the splint and the place corresponding to the fracture.

15th. Reapplied splint, bandages, &c.; not the least deformity.

30th. Removed splint, bandages, &c.; solid and perfect union is established in the most desirable way; there is no trace whatever of deformity, and the full length of the limb is restored; rolled the limb to support the enfeebled capillaries, in order to remove some little œdema of the leg and foot; there is no further necessity for mechanical support to the thigh; the knee-joint is rather stiffened and limited in its motions, from the long extension exerted upon it.

Dec. 11th. Œdema about leg and foot gone, and knee-joint quite flexible; still confined to bed.

18th. Allowed to get up and walk about with the assistance of crutches.

Jan. 10th. The patient can now walk about without any support, and he has not the slightest halt or trace of the original deformity.

The condition of the limb at this time is accurately portrayed in the engraving (Plate I. fig. 2.), taken from a cast which was executed before the young man left the hospital.

I have frequently seen the subject of these remarks since he was dismissed from hospital, and he continues entirely free from any impediment in walking.

Case II.—*Fracture of the Femur below the lesser Trochanter.*

Anne Jackson, aged fifty-six years, admitted into Mercer's Hospital, March 15, 1850. She was thrown down by a car passing rapidly by, and fell upon her left hip; the surface was uneven, particularly beneath the thigh, and she was conscious of the limb being broken from the moment of the accident. The patient was conveyed to hospital six hours after receiving the injury. The deformity was remarkable: the limb, on measurement, was between an inch and a quarter and an inch and a half shorter than the other; it lay everted, and swelling had set in rapidly both on the anterior and outer aspect of the limb, below the great trochanter. On extension being made, the full length of the limb was readily restored, but on being relaxed the deformity was quickly reproduced. On more close examination the solution of continuity could be traced just below the lesser trochanter, and to pass from without downwards and inwards, not very obliquely, but sufficiently so to allow the lower fragment to be drawn upwards and outwards, somewhat overlapping the upper, and restraining it back. When by extension the upper and lower fragments were brought into apposition, and rotation of the leg and foot performed, crepitus was distinctly heard; co-existing with the fracture there were considerable contusion and effusion of blood through the soft parts behind the hip-joint. From the time of admission for many hours the patient seemed to suffer very seriously from the shock, and though wine was freely given to her during the six hours before she applied at the hospital, it required great caution and watchfulness to conduct her through this stage of collapse. She was at once placed on a soft bed with the limb steadied by a long splint on the outside, resting evenly supported and elevated towards the heel, on a gently inclined plane of pillows. A mixture containing ammonia, ether, camphor, &c., was freely administered every third hour, and warm wine and water were given at short intervals; heated jars were likewise

applied to the stomach and sound limb; in a short time she fell into a quiet sleep.

March 17th. Great watchfulness; pulse weak; tongue dry, contracted, and brown; no pain whatever in the limb; ordered to continue the ammonia mixture, &c., and to have six ounces of wine.

18th. Had sleep; pulse better; tongue more expanded and moist; to continue stimulants as on yesterday, and to have aperient medicine, composed of rhubarb pill, blue pill, and carbonate of ammonia.

20th. On this day re-adjusted the mechanical appliances; placed the tail bandage from the toes up to the groin, and the long splint as before on the outer side of the limb and trunk. To continue stimulants and full diet.

21st. The complication of retention of urine, ever since the second day after the injury, was relieved by the catheter at intervals. Had this symptom occurred immediately after the accident, it might probably, and with reason, be referred to some slight concussion of the spine occurring simultaneously with the fracture; but in the present instance, it may be ascribed to the constrained position enjoined on the patient.

22nd. Feels quite comfortable; tongue moist; appetite improved; slept well. The patient has likewise regained the power of emptying the bladder without surgical interference, the incapability having lasted for five days.

25th. Re-applied the splint as before.

29th. Again threatened with sinking and collapse; increased the quantity of stimulants.

31st. Urgent symptoms of depression all gone; pulse again up and steady; tongue moist; every precaution taken to guard against stripping over the sacrum,—perforated air cushions placed beneath the parts exposed to pressure, and the surfaces freely brushed over with a strong solution of the nitrate of silver.

April 3rd. Going on most favourably; now all swelling, the result of the immediate injury about the fracture, is removed, and the upper and lower fragments lie in excellent position.

20th. Re-adjusted splint, bandages, pads, &c., on the 10th, and again on this morning. The case continued to improve; union becoming more and more firm, until finally completed on the 5th of May, when the splints were removed altogether, and on the 10th of the month the patient was dismissed, with the limb preserving its full length, and free from deformity.

Case III.—*Fracture of the Femur partly within and partly without the Capsule.*

Eliza Stafford, aged forty-nine years, admitted into Mercer's Hospital, March 9, 1851. She was walking along the edge of the pathway, and having trod on a piece of orange-peel she slipped off the curb-stone, and pitched forcibly upon the great trochanter of the right thigh. The patient could not move from the ground, and was raised, suffering acute pain at the part referred to, and totally incapable of leaning the slightest weight upon the limb. She was instantly brought to hospital. On removing the clothes, the deformity was characteristic of fracture close to the hip-joint. As she lay upon her back on the bed, the foot and knee were turned out; or, in other words, the right limb was everted; it was also shortened two inches and a quarter. By gentle and continued traction it could be brought down to the same length as the sound one, but on being released, a similar amount of shortening was quickly reproduced; the fulness of the trochanter was comparatively lost; there was prominence on the upper and forepart of the thigh, ascribable to the retraction of muscles; the patient had no power of lifting the extremity *en masse* from the bed; the limb, on being brought down to the full length by extension and then rotated, yielded distinct crepitus close to the trochanter, partly within and partly without the capsule; the line of movement on rotation indicated such a direction. Another point, also, to be taken into consideration was, that the limb, on rotation, moved upon a pivot, the extremity of the trochanter being, as it were, the centre of motion, and not passing through the arc of a circle as described by it when preserving its integrity with the head of the bone. I at once applied Liston's splint along the outside of the limb with all the exactness which it requires, particularly guarding the groin and ankle from pressure. Ordered a full opiate at night, the bowels having been previously well operated on.

10th. Expresses herself as deriving great comfort from the application of the splint; tendency to spasms, which at first threatened, has ceased ever since the limb was put up.

12th. Free from all uneasiness in the limb; by measurement it remains fully the length of the sound one; deformity in front from the retraction of muscles all gone; brushed over the surfaces of the back and sacrum exposed to pressure with a strong solution of the nitrate of silver to prevent stripping; tongue inclined to be a little dry and brown; ordered ammonia, wine, and liberal diet.

14th. All threatened constitutional disturbance gone; to continue stimulants.

22nd. Re-applied splint, bandages, &c., twelve days having elapsed since they were put on: the limb preserves its full length.

28th. Re-adjusted splint, &c.

April 10th. On removing the splint to-day, it appears that union is quite firm; there has been no undue pressure exerted over the groin or ankle, and the limb is fully as long as the sound one; put on the splint as before.

24th. Union quite perfect; rolled the limb and supported it on an even pillow in the extended position.

May 5th. Allowed the patient to move about on crutches, and on the 13th she was able to leave the hospital with the assistance of a walking-stick; in a few weeks after, the patient walked unsupported to the hospital without the least halt.

Case IV.—*Oblique Fracture of the Femur about its Centre.*

Charles Bishop, aged 15 years, admitted into Mercer's Hospital, June 10, 1851. On the day before admission he was wrestling with a school-fellow, who threw him down and fell with considerable violence across him; he was conscious of the right thigh being broken, from the yielding of the limb and the severe pain occasioned at the time; after the fall he lay perfectly unable to move the limb, and had to be raised from the ground and carried home. The patient was brought to hospital on the following morning at visiting hour, when I saw him; the most superficial inspection of the limb at once led to the inference of fracture; the extremity was shortened, the bulk of the thigh increased, and the knee and foot partly rotated outwards; on closer examination the amount of shortening was so great in this young boy as to awaken curiosity in reference to its real extent: on careful measurement it was found to exceed two inches, being occasioned by the obliquity of the fracture, which occupied the middle third of the thigh bone. On handling the displacement and making extension so as to restore the bone to its full length, there was evidence that the force had been applied to the hip and upper part of the thigh —on its outside marked by severe contusions, while the inner aspect of the knee, which was slightly abraded, rested upon the ground. It was clear the course of the fracture traversed from above and without downwards and inwards; and it was also evident that the lower fragment was drawn upwards and a little outwards, overlapping the upper, and thus restraining it from projecting forwards. I at once proceeded to steady the broken

bone; applying the tail bandage from the toes to the groin, and after this Liston's splint along the outside of the limb. Scarcely had the apparatus been adjusted, when the little fellow said he was free from all pain. In a few hours after the application of the splint, being called suddenly to a case of emergency admitted to hospital, I visited the boy and found him in profound sleep,—a sufficient proof of the relief he obtained.

June 11th. Slept nearly all night; has had no startings or uneasiness in the thigh. I may mention here, that sleep was prevented altogether the first night after the accident, by constant spasms, but which have ceased ever since the limb was placed under control by mechanical means.

16th. Neither bandages nor splint have required removal since first put on, and the broken thigh is fully the length of the sound one.

23rd. Re-applied bandages, splint, &c.; the upper and lower fragments of the broken bone lie in admirable relationship, and in such excellent apposition that the most scrutinizing measurement proves no difference between its length and that of the uninjured one.

28th. Union progressing rapidly.

July 13th. Re-adjusted splint, bandages, &c.

29th. Dismissed from hospital; the length of the limb being fully preserved, and the union perfect.

Case V.—*Oblique Fracture of the Femur through the great Trochanter.*

Richard Hayden, aged 63 years, admitted into Mercer's Hospital, Nov. 13, 1851. In coming down stairs he slipped the entire flight, and fell upon the right hip. He was assisted up, and could not stand after the fall; he was instantly brought to hospital. On viewing the case it was necessary to diagnose between contusion, dislocation, and fracture; and the latter whether within or without the capsule. The limb lay everted, immovable, its muscles perfectly firm, under control of the will, and as a sequence the power of raising the limb *en masse* from the bed lost; there were also comparative shortening and fulness at the upper part of the thigh. These symptoms awakened suspicion as to the true nature of the lesion; careful measurement of the injured limb, from the spine of the ilium to the upper edge of the patella, and from the former point to the tip of the inner malleolus, as contrasted with similar measurements of the sound extremity, proved an amount of shortening very nearly two inches; on causing gradual and steady extension to be made in the axis of the limb, by an assistant grasping the leg

above the ankle, and rotating inwards and outwards, distinct crepitus was not only communicated to the hand of the surgeon placed over the great trochanter, but was likewise audible to the bystanders; the very line of the fracture could be traced traversing somewhat obliquely through the great trochanter. I at once reduced the fracture, and maintained it so by placing Liston's splint along the outer side of the limb and trunk, retaining it by suitable bandages. Ordered a full opiate immediately after.

17th. On removing the splint to-day for re-adjustment, the assistant unintentionally relaxed the traction at the ankle, and the full amount of shortening was reproduced as on admission; the crepitus was not so distinct, because the products of inflammation had masked it; put on the many-tail bandage and long splint as before.

20th. The patient has suffered no annoyance from spasm,—an exemption to be entirely ascribed to the early coaptation of the parts.

December 1st. Re-applied splint, &c.; threatened with stripping of the sacrum; parts guarded by the application of a strong solution of nitrate of silver, and the use of perforated cushions.

14th. Consolidation of the fractured bone proceeding rapidly; the amount of callus thrown out exceeds that usually secreted when coaptation of the fragments has been so quickly brought about as in the present instance.

30th. Removed splint, bandages, &c.; union quite firm; patient still restricted to bed.

January 6th. There are two points worthy of remark in this case,—first: the rapidity with which the patient gained command over the muscles of the thigh and leg; and secondly, the quickness with which the functions of the knee-joint, flexion, and extension were brought about. In five days after the above date he was dismissed from the hospital, with no impediment in the limb, and its entire length preserved.

Case VI.—*Oblique Fracture of the Femur below its Centre.*

Thomas Flynn, aged ten years, admitted into Mercer's Hospital, February 26th, 1852. The boy was standing in a car when the horse moved suddenly and rapidly on; the little fellow got frightened and jumped out, and fell forcibly to the ground. On being taken up, it was discovered that his left thigh was broken; he was at once brought to hospital, when I saw him. The outline of the thigh was very considerably altered: it was thicker and much shorter than the right one;

the foot and knee were everted. On manipulation, the femur was readily detected broken a little below its centre; the fracture was very oblique, so much so as to permit shortening to two inches, as indicated by measurement. I drew down the lower fragment, which projected upwards and backwards, bringing it into apposition as nearly as possible with the upper one, which had only deviated a little forwards from the proper axis, owing to the lower fragment taking the position assigned to it; an assistant thus retained them while I applied Liston's splint along the outside of the limb; immediately afterwards the boy expressed himself free from pain.

February 27th. Shortly after the limb was put up on last evening the child fell asleep, and remained so all night. He had no complaint to make this morning either from undue pressure or pain.

28th. Bandages not disturbed; and, though oblique the fracture, the full length of the limb is preserved.

March 1st. Replaced the perineal lac by a fresh one filled with curled hair.

March 8th. Steadily improving since last report. Removed the bandages, splint, &c., now for the first time, a period of twelve days having elapsed since put up; but the perineal lac had been frequently renewed, owing to the child constantly wetting it with urine.

15th. Re-applied splint, &c.

25th. After removing the splint to-day, I carefully contrasted the length of the limb with the sound one—no difference between them; the union is quite firm, and the quantity of provisional callus very small.

29th. Union quite perfect, so dispensed with the splint altogether.

April 2nd. Dismissed from hospital; no shortening whatever.

Case VII.—*Fracture of the Femur external to the Capsule.*

Eliza Lawlor, a cook, aged 50, admitted into Mercer's Hospital, October 8th, 1852. Her statement goes to prove that she fell from a house-ladder, upon which she had been standing, putting some things in a high press; she slipped and pitched upon her right hip, the leg got entangled between the steps, and she fell rather obliquely and with considerable force. After the fall she could not get up from the ground, and when lifted she could not stand upon the limb; she was quickly brought to hospital. On removing the clothes for examination, the rotatory derangement of the limb outwards was

very marked and the shortening very considerable,—on measurement two inches and a quarter. By gentle and gradual extension the limb could be brought down to the length of the sound one, but on traction being discontinued, the entire amount of shortening quickly recurred: the patient possessed no voluntary power over the muscles of the limb, yet I was able to flex and extend it with facility, and to rotate it inwards and outwards with very little force. During the latter movement crepitus was readily elicited, and appreciable almost under the fingers external to the capsule. The prominence of the trochanter was diminished, it was too near the crista of the ilium, and on the limb being rotated, it seemed almost distinctly to move on its own axis instead of describing an arc; besides, the swelling at the upper and forepart of the thigh was remarkable, and over this region, also, the greatest tenderness to the touch prevailed: the shortening in this case was very great, but its excess was the more diagnostic and confirmatory of the extracapsular fracture in contradistinction to that within the capsule; the experience of Boyer, Earle, Stanley, Smith, and others, have now settled this question and set it at rest for ever. Being convinced of the locality of the fracture, and the age of the patient only fifty, I was the more anxious in rendering every assistance to bring about bony union, and at once applied Liston's splint; the greatest comfort was experienced from its support, and all troublesome spasm and pain were relieved.

October 9th. Slept well; the extension is effectually kept up, and the deformity removed; the limb maintains its normal length.

21st. The splint, bandages, &c., were removed to-day for the first time since admission, and more as a precautionary measure to see that all was right than as an act imperatively required.

28th. The patient makes no complaint of undue pressure, though a very considerable amount of extension is required to maintain efficiently accurate coaptation of the broken fragments.

31st. Re-applied splint, bandages, &c., as before.

November 9th. This day removed the splint, and carefully examined the site of fracture: callus is freely thrown out; the full length of the limb is preserved; adjusted the splint as before.

15th. Union progressing favourably.

20th. The case has gone on without a single complication, the mechanical means requiring but seldom to be stirred.

23rd. More than six weeks have passed over since the splint was first put on, and as the repair of the broken bone has been

uninterrupted in its progress, union is firmly established; pressure or motion of the limb in its socket does not produce pain; there is no shortening or deformity of the limb whatever: this has been closely examined into by my colleague, Mr. Tagert. Afforded the limb gentle pressure by a roller from the toes to the groin, and supported it evenly on a soft pillow.

26th. The patient has gained a good deal of motion already in the knee-joint, and is recovering full control over the muscles. Without my permission she made the effort this day to walk on the limb, so as to test its strength, and it fully supported her weight. It is scarcely necessary to add, I cautioned her against a repetition of this rash experiment for some time. As the patient was in comfortable circumstances, she requested permission to be allowed to return home.

There is a good example afforded in this case of what may be accomplished in fracture of the thigh bone close to the capsule, by setting the fracture at once in the straight position, and keeping it steadily and immovably so. I know no treatment which could be so successful in allaying the pain, quieting the spasms, and averting that form of irritative fever so frequently attendant on this injury, and fraught with such peril to the patient.

Case VIII.—*Oblique Fracture of the Femur close to the Knee-joint.*

Mary Murphy, aged fifty-three years, admitted into Mercer's Hospital, September 28th, 1852. A young woman for amusement lifted her from a chair and then tried to run across the room with her; this she was unable to accomplish; she slipped and fell forwards with her burden to the ground; with great force and weight she came upon her knees across the patient's right thigh, instantly breaking it; the fracture was quite audible at the time. The woman was at once removed to hospital, and I saw her immediately after. On examination, the right thigh was considerably shortened; the solution of continuity in the bone was discovered close to the knee-joint, passing from about the junction of the lower and middle thirds of the bone from without downwards and inwards, very obliquely, to just above the expansion of the internal condyle; the obliquity of the fracture permitted an amount of shortening fully two inches, and this created a very striking deformity, more particularly remarkable because in this part of the bone the lesion is usually transverse. I at once applied Liston's splint, modified in the manner hereafter to be noticed, restoring the full length of the limb, relieving the patient from pain, spasm, and apprehension

of agony, from the slightest movement of the trunk. After the application of the splint a full opiate was given.

September 29th. Slept during the entire night free from pain and spasms.

October 6th. Limb lying most comfortably; no necessity for stirring the apparatus.

11th. Necessary to change the perineal belt, from the patient not having observed sufficient cleanliness.

16th. The patient is free from pain, and there is no undue pressure exerted anywhere.

18th. Re-applied splint, bandages, perineal belt, &c. The broken fragments lie closely in contact, and the thigh bone preserves its full length.

27th. Union is progressing most favourably. On contrasting the broken limb with the sound one, there is no appreciable difference as to length between them.

November 3rd. It has not been necessary to re-adjust the splint since the 18th of last month, the perineal belt alone being changed.

12th. Removed the splint altogether, more than six weeks having elapsed since its first application. The union is quite firm; and on the closest investigation and measurement by Mr. Tagert and myself, he pronounced the limb exempt from any shortening whatever, and without the slightest eversion or inversion of the foot; rolled the limb from the toes up to beyond the centre of the thigh, so as to support the enfeebled circulation, and placed a soft cushion beneath its entire extent.

15th. Rolled only the leg, thus leaving the knee-joint free for gentle flexion and extension, and exposed for the application of a simple liniment.

20th. Nearly the entire action of the knee-joint is restored; the patient is able to bend the leg fully to a right angle with the thigh, and is rapidly gaining command over the muscles of the entire limb. Still confined to bed.

25th. Permitted to get up and move about with the assistance of crutches. In a few days she left the hospital with the limb perfect in all its functions.

There is one point of great value to be remembered in this case, namely, by the early coaptation and perfect adjustment of the broken bone, the throwing out of a large mass of callus was prevented; had this taken place to any extent, it might, from the proximity of the fracture, have afterwards interfered with the functions of the knee-joint. To this practical fact I have already alluded, when writing on fractures in the vicinity of the ankle-joint.

Case IX.—*Fracture of the Femur through the great Trochanter, nearly transverse.*

William Gray, aged forty-three years, admitted into Mercer's Hospital, October 26, 1852. He was found by the police lying drunk in the street, protesting loudly that his thigh was broken; he was instantly brought to hospital. On stripping the patient, it was observed, that his left lower extremity was both shortened and wasted, as contrasted with the right limb, and lay partly everted. On careful manipulation, the limb being drawn down gently and steadily, crepitus was discovered through the great trochanter while the act of rotation was performed; and though this diagnostic feature was distinctly elicited, the limb was not restored to within three-quarters of an inch of the length of the sound one; there was such regularity of its outline, however, I did not hesitate to apply Liston's splint, after the method which I am in the habit of adopting. On the following morning, when the effects of the debauch had passed away, and the patient recovered his senses, I ascertained from him, that he had no remembrance of the occurrence whatever, or the mode in which the accident occurred; at the same time he informed me, that the left limb, ever since he was a boy, was much thinner than the other, and that it was also three-quarters of an inch shorter, the truth of which assertion he proved by having his shoe shown, the heel of which was raised considerably beyond that for the sound foot, so as in some measure to rectify the deformity. This shortening and wasting of the extremity the patient attributed to the effects of a very extensive burn which he experienced over the left loin and upper two-thirds of the corresponding thigh when a boy; the white, silvery cicatrix marking its destruction fully attests its severity. Being anxious again to examine the condition of the fracture, I removed the mechanical support; shortening was produced at once to three-quarters of an inch, the foot being only partially turned outwards; the site of the fracture was confirmed, as in the first instance, traversing the great trochanter; there was great tenderness felt over the part, and the patient was entirely incapable of lifting the limb from the bed; but the most characteristic symptom present in this instance, and one not usually to be met with, was, the upper part of the trochanter did not obey the motions of the limb during rotation; it was clear that great violence had been inflicted to cause this lesion, as the parts around were extremely ecchymosed. With the aid of an assistant, I restored the limb to the same position in which I

had placed it at first, and applied Liston's splint to retain it so. The patient immediately experienced great comfort.

28th. The patient slept steadily through the night, and free from all spasms.

30th. Going on most favourably; free from all pain. As the patient possesses ample means, he requested permission to be removed home, and solicited my attendance. He was removed from the hospital in a cart, and conveyed several miles without the slightest disturbance of the fracture, or displacement of the splint which I had applied three days before.

31st. Visited the patient after his journey; he has not suffered the least irritation from his removal. I did not think it necessary to re-adjust the splint.

November 3rd. Replaced the pelvic band.

24th. This case has gone on from the commencement without any complication. Re-adjusted the splint for the first time since it was put on twenty-nine days ago.

30th. Removed the splint, now five weeks after the occurrence of the fracture; and it is remarkable, how far the consolidation of the union between the broken fragments is accomplished; the limb fully preserves the length it was before the accident; and the foot, leg, and lower fragment hold their proper direction without the slightest deformity of any kind. Re-applied the splint as before.

I have no doubt that the limb will be as useful to the patient as it was before he met with the accident. I have stated that the union is already nearly completed, and the man promises to be cured in the ordinary time required for the reparation of a broken thigh.

The most prominent points of interest in Case No. 1. are, first, the site of fracture and the nature of the deformity; secondly, the re-fracture of the united bone. In fracture of the femur occurring below the lesser trochanter, it was first strenuously laid down by Sir A. Cooper, that a great prominence in front characterized the accident, occasioned by the upper fragment being lifted forwards and upwards by the action of the psoas and iliacus muscles. He says, "the thigh-bone is sometimes broken just below the trochanter major and minor; it is a difficult accident to manage, and miserable distortion is the consequence if it be ill-treated. The end of the broken bone is drawn forwards and upwards so as to form nearly a right angle with the body, and the cause of this position is evidently the contraction of the iliacus internus and psoas muscles." Ever since this paragraph was written, its substance has been

copied into almost every work on surgery without comment. I do not mean to say, the upper fragment never projects forwards, but I deny altogether the frequency of its occurrence. Sir A. Cooper even gives a plate showing the abnormal projection of the superior fragment, and says, "a better idea of the effect of this accident may be obtained by a view of the plate, in which the bone will be observed to be united not only with extreme shortening, but with a hideous projection forwards." Now in the case of Toole, there was no doubt of the bone being fractured just below the lesser trochanter; from the axis of the fragments, and their point of junction, it was concluded so; and from their re-fracture it was confirmed, because the callus yielded at that part corresponding to the original separation. Yet here, in this instance, though the parts were left uncontrolled, owing to the unsteadiness and irregularity of the patient, there is no projection forward of the upper fragment, but there is "horrid deformity" created by the bones being dragged outwards, and forming an angle salient in that direction. The plate referred to by Sir A. Cooper merely shows the lower fragment drawn up nearly to the root of the great trochanter, and united there; the preparation is said to be in the Museum of St. Thomas' Hospital; but of this specimen there is no accurate information recorded.

In Mr. Hind's book, "On the Causes of Displacement of the Bones of the Extremities in Fracture," the following description is given of this fracture: "The displacement is greater in the upper than in the lower portion of the bone; it will be found projecting almost at a right angle with the pelvis, producing the elevation already described in consequence of the actions of the psoas magnus and iliacus internus." In accordance with these words, we also find a plate in the volume, showing the relative position of the fragments, the upper riding over the lower; but there is no proof given that such a specimen ever existed, from which the drawing might have been taken.

Now in the case of Jackson, No. II., there was clear evidence of fracture below the lesser trochanter, traversing from without, downwards and inwards, with considerable obliquity; so as to allow the fragments to pass each other, the lower being drawn upwards and outwards, contrary to what usually occurs, owing to the action of the adductors preponderating; in this instance, all anterior projection of the upper fragment was prevented by the lower resting upon it; in Case No. IV. we have evidence of an almost exactly similar displacement, and the same force counteracting deformity. I may state here, that

Mr. Tagert, Senior Surgeon to our hospital, whose opinion on all points relating to practical surgery is, from his vast experience, entitled to great weight, mentions, in his Lectures, that he has never seen the deformity even approaching to the extent portrayed by Sir A. Cooper, and in the large majority of cases it is altogether absent in the anterior direction.

Still further in support of my opinion as to the rarity of the projection of the upper fragment, noticed by Cooper in the special fracture under consideration, I lay great stress on the following evidence: specimens that speak out for the truth. In the Museum of the Royal College of Surgeons the following preparations are preserved, and noticed as follows in the catalogue:

E. A. 554.—"Fracture of the left thigh bone in a female below the trochanters. Complete osseous union has been established. The fracture was very oblique, and of such a shape, that the upper end of the shaft lies consolidated in a wide and deep groove, four inches in length, in *front* of the superior fragment, which consisted of the head, neck, and both trochanters. In this case the inferior fragment formed the projection felt at the upper part of the thigh."

E. A. 555.—"Fracture of the right femur in a large man; healed with considerable deformity. The fracture was close beneath the trochanters, very oblique, and overlapping. The upper extremity of the lower fragment stands forwards, and rises as high as the neck of the bone."

E. A. 559.—"Fracture of the left femur in a young man. The fracture extended from within and above obliquely downwards and outwards from below the trochanter; has been completely and smoothly united; the upper extremity of the lower fragment formed the principal projection in the groin, being nearly in front of the upper."

E. A. 580.—"Fracture of the left os femoris of a man, close under the trochanters, firmly united by bone; the lower fragment projects forwards, and makes a tumour in the groin; the upper part of the shaft stands *outwards*."

There is another specimen in the College, where the upper fragment stands outwards. E. A. 582.—"Oblique fracture of the femur below the trochanters. The shaft is elevated and thrown to the inside of the upper piece, which makes a projection towards the outer and anterior part of the thigh; the union is firm and very unseemly."

In the Museum of the Original School of Medicine there is a fine specimen of a very remarkable fracture, occurring below the trochanters, which Mr. Ledwich was kind enough to show

me. In this preparation the superior fragment lies in front of the lower; from the anterior surface of the shaft of the bone a third piece was detached, fully three inches long, which was displaced upwards; it never after regained its normal position, but became united as a wedge between the two fragments, producing prominence of the upper, which must have been remarkable during life. All are bound together by a thick bond of callus posteriorly.

Amongst all the preparations of fractures, traversing the upper part of the thigh bone, and in which the pathological department of the Museum of the College is very rich, there is not a single specimen where fracture has occurred below the lesser trochanter, which exhibits the superior fragment lying in front of the lower, while, as already observed, there are several to prove the converse of the proposition. Again, there is not a specimen to demonstrate a transverse solution of continuity in the bone below the trochanters—all are alike characterized by their obliquity and extent of fracture. I have stated before that I do not mean to deny the possibility of the upper fragment projecting in the groin; but I cannot bring to my mind or find in my note-books a single well-marked case where the distortion could be attributed to such a cause. Circumstances may conspire to produce it: the direction of the force, most probably when applied from behind; youth—for at this period when the bones yield they break more transversely than in after life;—such a sequence is most likely to disentangle the upper fragment, and leave it free to the action of the psoas and iliacus muscles.

The second position to be considered in the case of Toole is in reference to the re-fracture of the bone. It has been already stated that the limb was useless in progression, being somewhat more than five inches shorter than the sound one. Thirty days had elapsed from the period of the accident, and the union was quite solid, sufficiently so to bear the weight of the body. The breaking of the callus in fractures badly consolidated is a very ancient practice, and highly extolled by many. And it was not until about the beginning of the last century that Petit and Heister so strongly objected to it, and Boyer and Callisen easily succeeded in causing it to be generally proscribed. Richerand, however, amongst the moderns, believed in its utility, but confines its application to cases where the deformity is excessive, and where it is urgently demanded by the patients. In Germany, however, we have very strong evidence in its favour. M. Oesterlen, in his endeavour to demonstrate the advantages of the rupture of the callus, has collected in his book several

instances, not only derived from his own practice, but from that of surgeons in neighbouring Cantons. The rule upon which Dupuytren acted in those cases was consonant with his views respecting the formation of callus; he concluded that, in general, it might be considered practicable to overcome the resistance of the callus within a period not exceeding sixty days from the receipt of the injury; but that exceptional instances prove that this operation has been successful even after the lapse of a much longer interval of time. Dupuytren relates several cases in his "Leçons Orales de Clinique Chirurgicale," where he removed serious deformities by mechanical force,—with splints, compresses, bandages, &c. But the mode by extension, counter-extension, and forcibly moving and rotating the limb,—that practised in most of Dupuytren's cases, and so successfully in mine,—will not always succeed, and then we must proceed to more severe measures.

It is important on this subject to divide the deformities into two classes, according as they are merely a shortening of the limb, or where the bone is consolidated with an angular deformity. Velpeau says, the rupture of the callus in the first case should not be attempted after the third month of the fracture. At a later period we should have to fear the fracture of the bone in a sound portion, as well as in the diseased part, and we may well conceive that there would then result no advantage from it.

When the callus is angular to the degree of interfering to a considerable extent with the functions of the limb, Velpeau approves of its being broken, no matter how ancient the consolidation may be. Numerous apparatus and various processes have been contrived to arrive at this result. M. Oesterlen has given a figure of one of these. It consists of a strong wooden bar, from the extremities of which two metal stems pass down, each of which terminates in a pad concave below, and to which is attached by straps another pad concave on its upper surface. These pads, and along with them the whole instrument, are firmly fastened on the limb, by tightly buckling the straps in such manner that the seat of the fracture occupies the middle point between the two metal stems. From the part of the bar midway between the two stems another metal stem, terminated by a pad, passes down, which, when the instrument is applied as directed, will correspond exactly to the callus. With the middle stem is connected a winch, by which, in the operation, the pad is brought suddenly and forcibly to bear upon the callus, so as to rupture it. M. Oesterlen adduces many cases in proof of the safety with which the fracture may be reproduced by means of his invention, which certainly admits of the

application of a greater force, and one that can be much more nicely regulated than the rude methods of the old surgeons. It is obvious that this method is adapted to those cases chiefly in which the deformity is angular, or rather to cases in which we may anticipate the line which the secondary fracture will assume, and in which the rupture of the callus will enable us to restore the proper form of the limb with little extension.

Velpeau's method is very simple: he says it almost always answers in angular deformity to fix the affected limb on its concave part to a solid plane, while we suddenly press down upon it, with the knee or the two hands placed upon its convex part. Having effected the rupture, we then must extend the part as much as possible, and retain it so until it has acquired its natural strength. Even this will not always answer: and excision of the angular callus is sometimes preferred, as recommended by M. Clemont;—the first time he performed the operation on a young child, and the second time on an adult. In both cases it was a femur, bent into an angle, in consequence of former fractures badly treated. The surgeon laid bare the osseous projection by an incision sufficiently long, removed by two cuts of a saw a wedge from the femur, re-adjusted the limb, re-united the wound, and afterwards applied the ordinary dressings for fracture of the thigh; the two patients recovered perfectly[a]. It must be conceded, however, that to Dr. Barton is due all the credit of this operation: for the *wedge principle* is precisely the same, whether to remedy a permanently angular or flexed position of the limb from an anchylosed joint, or a badly treated fracture.

The foregoing cases afford evidence of oblique fracture occurring almost in every part of the thigh bone; and each alike equally amenable to treatment, on the principle of extension by the long splint, even in the fracture taking place below the lesser trochanter, should there be displacement forwards, which, as I have pointed out, under certain conditions may occur, though rarely; yet it, too, may be made subservient to a similar plan of treatment, as proved from the following interesting case given by the late Dr. Houston:—

"Ellen Kelly, aged 13, was admitted into hospital on the 17th June, 1835, with fracture of the right thigh, close beneath the lesser trochanter. Two days had elapsed before she was brought to hospital, and during this time she had been allowed to lie on the side, with the limb in the flexed position; no other mechanical means had been used to bring the bones into apposition,

[a] Archives Générales de Médecine, 2me Serie, tom. xi. p. 235.

or to preserve them against being moved by the action of the muscles. The girl had, in consequence, suffered much from spasm; the limb was swollen to more than double its natural size; vesications had also formed on several parts of the skin; and there was severe symptomatic fever. The upper fragment projected much forward, and gave to the thigh a curved appearance. The same position as that in which she had lain before admission was persevered in; and under the use of refrigerant applications a considerable reduction of the inflammation was effected by the end of the fifth day from the occurrence of the accident; but, nevertheless, during all this period a night-nurse was obliged to sit by the bedside, with her hand on the broken limb, which otherwise, on every attempt to sleep, awoke the patient with a spasm. On the morning of the sixth day she was turned on the back; the broken limb was pulled to the same length as the sound one; permanent extension was kept up by Desault's splint, applied on the outside; a corresponding long splint was placed along the inside, and a short one was laid on the front, so as to make pressure on the projecting end of the broken bone. Long pads of bran were interposed between these and the limb, and the whole secured together by broad straps and buckles, in such a manner that the limb was subjected on every part to moderate and uniform pressure.

"The business of altering the position of the patient, and of setting the fracture, was productive of much pain; and no doubt, had the operation been practised in the first instance, not only would the amount of suffering caused by it have been comparatively trifling, but most probably the distressing spasms and inflammatory swelling, borne during the first five days, might have been averted; for, from the moment in which the limb was settled, as has been just described, all tendency to deranged action of the muscles ceased, the girl slept soundly, and the tumefaction rapidly subsided. She expressed herself as much more comfortable in her new than in her old position, and got well rapidly, without any farther untoward symptom. She walked out of the hospital on the 20th of August, without any appreciable difference, as to the shape or length, between the unbroken and mended limb."

Dr. Houston goes on to say:—

"The treatment, by permanent extension, of fractures of the femur close to the trochanter, is not, it will be observed, that which is usually practised in such cases, but it was here most completely successful; and I might state other instances in which I have adopted it with equal effect. I might also

mention cases of a similar kind, in which the plan of keeping the limb in a state of complete flexure, all through the period of healing, was followed by an opposite result"[a].

The best criterion of any plan of treatment is the efficiency with which it fulfils the required object. In the nine cases recorded, it will be seen all were cured without the least eversion of the foot,—a distortion so frequently produced by the treatment with the double inclined plane; in all, though oblique fractures, the limb was restored to its full length, and in a short time the motions and functions of the neighbouring joints perfect. I have seen in the hands of others this method equally successful: then great was my surprise to read in a volume, not long since issued from the press, the following observations:—"During the attendance of Mr. Abernethy on St. Bartholomew's Hospital, his custom was to place all patients with fractured thigh upon the side, according to the practice of Mr. Pott, bending the thigh on the pelvis, and the leg on the thigh; and I cannot find the practice of the present day more successful than his"[b].

There is not a book on modern surgery but discards Pott's views and mode of treating fractures of the thigh; because they are incapable of fulfilling the indications of cure, and if persisted in, are almost in every instance followed by pitiful deformity: the method is renounced by every modern surgeon for a better line of practice eminently successful; and why Mr. Skey has not advanced with his contemporaries I cannot pretend to answer.

In Case viii., where the femur was split very obliquely above the knee-joint, the double inclined plane, as favourably recommended by Sir A. Cooper, was quite useless,—extension, and that with considerable force, was imperatively required to counteract the fragments passing each other, and this was gratefully afforded by the long splint.

The mechanism adopted by Desault and Boyer, for keeping up permanent extension, were appliances most successfully employed by these celebrated surgeons; and although complicated and cumbersome, yet they were useful on a like principle, though not to the same extent as the apparatus now in most general use, as simplified and improved by the late Mr. Liston. Many, indeed, have been the additions made to Desault's splint. Van Houte's alteration of it is for the purpose of keeping up extension in the long axis of the limb, by means of a cross

[a] Houston, in Dublin Journal of Medical Science, First Series, vol. viii., Art. xix.
[b] Skey's Operative Surgery, p. 168.

board connected at right angles with the splint. Similar to this, except that to the cross board an inner splint is fastened, is Volpe's machine. Also Josse's apparatus, with a peculiarly arranged bed; Meyer's machine; Physick's apparatus, in which the external splint is continued to the arm-pit; that of Houston; also Alban's machine, which consists of a strong splint fixed on the outside of the ailing limb and to the pelvis; the extension is effected by means of a kind of lever contrivance at the lower end of the splint[a].

Of all methods of treatment that by the simple contrivance of Liston, modified, as I shall presently notice, is the most comfortable to the patient,—preventing eversion, shortening, and deformity; and the mechanism is so applied, that the trunk, pelvis, thigh, leg, and foot constitute one rigid body, which may be moved entire, but the component parts of which being immovable, *inter se*, preserve the same mutual relation. I have proved the advantages accruing from the appliance of this splint in every form of fracture to which the thigh bone is liable from without the capsule to the lowest part of its shaft. And, had I wished to transgress the bounds which I have marked out for myself in this paper, I could easily have given cases where it proved of most essential service in steadying the parts in fracture of the cervix femoris occurring in old subjects; as also in soothing and allaying the spasms consequent upon ulceration occurring in the cartilages of the knee and hip joints.

Liston gives the following description of his splint, and directions for its application:—"The apparatus consists of a plain deal board, of a hand's breadth for an adult, and sufficiently strong; narrower and slighter, of course, for young patients. It is made to suit the particular subject of the injury, to extend from opposite the nipple to three, four, or five inches beyond the sole of the foot. It is perforated at the upper end by two large holes, and provided with two deep notches at its other extremity; a sufficient hollow or perforation is made opposite the malleolus. A pad of corresponding length and breadth is attached by a few pieces of tape; a roller is split at the end, and having been tied through the openings in the top part of the splint, is unrolled so far, and fixed for a time to the lower end of the pad. Reduction having been effected by a little gentle and continued extension of the limb, while the pelvis is fixed, the position is preserved by an assistant placing one hand over the dorsum of the foot, and the other upon the knee; a narrow roller is applied from the toes to a little below the

[a] Chelius' Surgery, by South, vol. i. p. 569.

site of the fracture, with a moderate degree of tightness, to prevent infiltration of the limb, in consequence of pressure by the perineal band, which is now placed under the patient: it consists of a large soft handkerchief or shawl, containing the necessary quantity of tow or wadding, and covered with oiled silk. The splint is then laid along the outside of the limb, and the roller already spoken of is passed under the sole of the foot, and turned round the ankle and heel. These parts are previously thickly padded with tow, cotton, wool, or wadding, to prevent the painful effects of pressure, as upon them the resistance to the extension principally falls. The roller is carried repeatedly through the notches in the end of the splint, as it is crossed over the dorsum of the foot, and ultimately turned round the limb to near the groin. The object in pursuing this plan must be apparent: by the attachment of the end of the roller, and its subsequent arrangement, the apparatus is prevented from slipping upwards, and is made, as it were, of a piece with the limb. The ends of the perineal band are passed through the perforations, drawn with moderate tightness, and firmly tied; and a few turns of a broad bandage round the pelvis and chest complete the proceeding"[a].

Numerous disadvantages are laid down by writers, as resulting from the use of Liston's splint. It is stated that permanent eversion is likely to occur; that inversion of the foot, knee, and lower fragment may take place, the result of rotatory displacement; that much of the force necessary for extension is lost, owing to the obliquity of the counter-extending belt; that the ankle and groin are likely to suffer from pressure; that the pressure made across the groin causes great œdema of the whole limb, in consequence of the obstruction which is caused to the circulation in the inguinal veins and absorbents; and lastly, the objection made by Earle, that the limb being bound to a perfectly straight body, placed at the outside of the thigh, and considerable pressure made on the inner side of the knee in fractures of the shaft of the bone, tends to destroy the natural obliquity of that part, and bring it more into a straight line, which he states is not only destructive to the symmetry of the limb, but impedes progression, and renders the erect posture less secure. No doubt some of these untoward results arise from an inefficiency in the splint to accomplish all that is required, while others are created by its not being properly adjusted. To remedy these defects, I offer to the profession a modification of the splint, that which I have been in the habit of using,

[a] Liston's Operative Surgery, p. 88.

and, as proved by the foregoing cases, with the very best results. I am happy to say it has met with the warm approval of my colleague, Mr. Tagert.

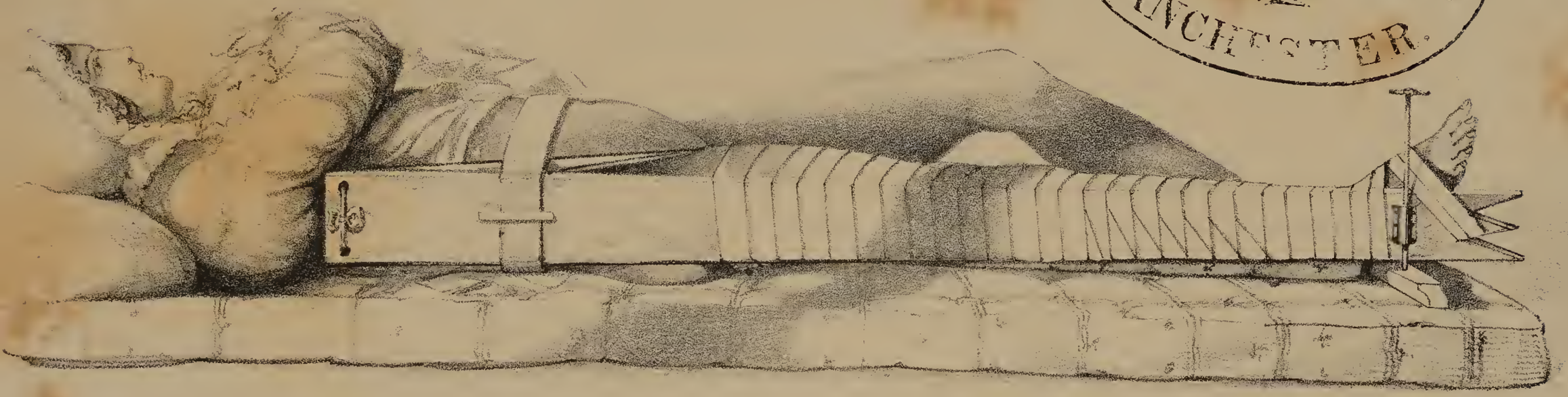
The alteration is very simple, and consists in the addition of a piece of wood placed in a transverse direction beneath the lower end of the splint, and upon which its edge rests. The splint is steadied in this position by means of a long screw conveyed through a socket rivetted vertically on the side of the splint. The upper end of the screw has fitted to it a brass handle placed across, while the lower end terminates in a cylinder which is received into the centre of the piece of wood, and fastened in a hollow beneath by means of a nut and washer. The cylinder, as contrasted with the screw, is somewhat contracted, and presents at its commencement a shoulder which rests upon the steel plate on the upper surface of the transverse piece of wood, while the remainder moves freely in the tube for its reception. From this it must follow that, by a few turns of the screw, the splint may be elevated or depressed at pleasure. Another advantage resulting from this mechanism is, the facility with which the splint can be reversed, the screw changed, and its adaptation to either limb effected.

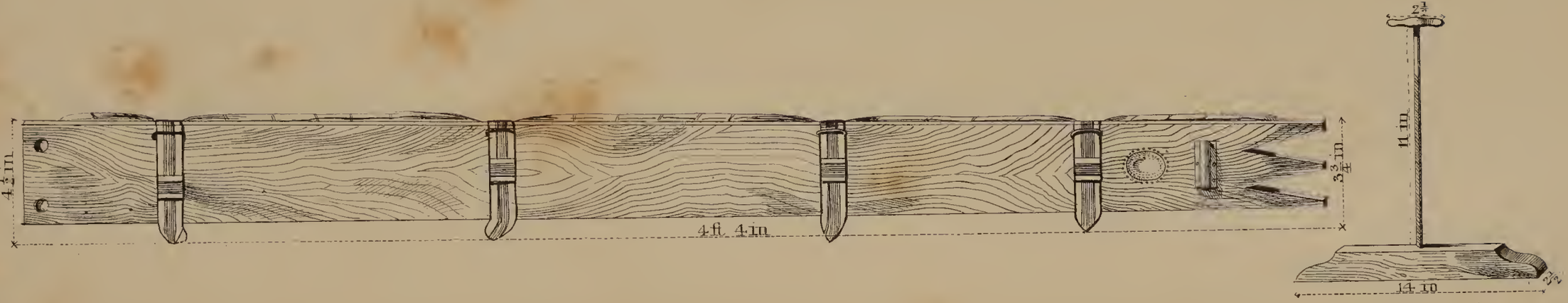
Plate II. shows the proportions to be observed in the form of the splint. It may be made of seasoned pine; its length, as will be seen presently, must be in accordance with the height of the patient. The length of that represented in the drawing measures four feet four inches; the widest part at its upper end being four inches and a half, which gradually diminish downwards to three inches and three-quarters opposite the ankle. It is eight lines thick, and is deeply notched at the lower end to the depth of four inches; whilst it is pierced at the upper by two circular holes, two inches and a half apart. There is cut in the lower end of the splint, corresponding to the outer ankle, an oval aperture, the centre of which is eight inches and a half from its extremity; and the socket for the screw is placed midway between its circumference and the acute angles formed by the notches. The length of the transverse piece of wood is fourteen inches; its breadth two inches and a half, and its depth two inches. The height of the screw above it measures eleven inches; and the length of the cross handle two inches and a half. A long cushion, somewhat wider than the splint, is applied to its inner surface, and extends from the apertures above to a point opposite the attachment of the screw. This cushion is retained in position by four straps and buckles; it is stuffed with horse-hair, and perforated for the reception of the ankle. The corresponding hole in the splint has tacked into it

Mr Butcher's Modification of Liston's Splint

Plate 2

ST. MARY'S HOSPITAL
RADFORD LIBRARY
MANCHESTER.





a pad, softly filled with a like material, and covered with chamois leather.

The application of the apparatus, modified as I have described, is almost exactly in accordance with the directions given by Liston,—the screw and transverse piece of wood being detached, the splint is applied nearly in a similar manner; there are, however, some cautions to be observed in its adjustment which he has not adverted to, yet a strict observance of which I consider absolutely essential, that the same satisfactory results may be obtained as followed in the embarrassing cases that I have detailed.

First, as to the preparation of the splint, and the guarding of the ankle from pressure. It has been stated that the splint is perforated, and has, adapted to the aperture, a soft chamois cushion; that a suitable pad extends along its inner surface, with a similar opening for the reception of the outer malleolus; but this not enough; there is also an additional pad, of variable thickness, required to lie between the outer surface of the knee and the padded splint; or, in other words, to fill up the space between them occasioned by the natural obliquity of the thigh bone, this, of course, from the breadth of the pelvis, greater in women than in men. The next point is, that the limb should be drawn down to its full length, the broken bones coapted and retained so by assistants, the ankle, heel, and dorsum of the foot rolled with soft wadding, the depression above the outer malleolus obliterated by additional folds of it, and the entire supported with a roller neatly applied from the toes to above the knee; then the ankle may be lashed to the splint, the surgeon taking good care that the turns of the bandage be even above the ankle, and secure the heel closely to the splint; if this be correctly done, eversion of the foot will be prevented. The ankle being thus fixed, and extension at the same time fully kept up, the perineal band is to be applied; this lac must be made of soft material and well stuffed, at the same time that a strong piece of tape is stitched along its entire extent, from one end to the other, to prevent its yielding; in its application care should be taken that it lies evenly up against the ramus of the ischium and pubis, that when the ends are brought through the holes at the upper part of the splint to be tied, they may be drawn on with an equal force; because otherwise the integuments will be wrinkled, and quickly excite much irritation. Until the lac is tied the required extension should be kept up by an assistant at the ankle, so as to obviate the reprehensible practice of thrusting the splint with the lower part of the limb downwards; for if this manœuvre be employed, the folds of

the bandage connecting the splint to the ankle are more or less altered in their direction: they no longer lie even, their upper edges constrict the part, and the skin is unevenly strained; if so, it soon irritates, inflames, and becomes so exceedingly painful that the patient demands the removal of the dressings altogether. The great advantages obtained from the length of the splint being preserved can be appreciated when the lac is applied; the counter-extension is directed exactly as the extension, in the most favourable line,—the axis of the thigh bone; because, as before noticed, its inclination is slightly inwards; from this direction then it follows, not a particle of force is misdirected or lost. Again, with regard to the holes for the reception of the ends of the counter-extending belt, I have mentioned they should be two inches and a half apart, or, more correctly, close to the edges of the splint; this favours the proper axis of traction, and takes the pressure in some degree from the trunk before and behind. From preserving the full length of the splint greater advantages still flow. In fractures of the thigh bone, approximating the hip-joint, the upper and lower fragments cannot be pressed upon and forced out by the perineal belt, because its action is directed upwards; this occurrence may take place if the splint be short, and applied as is usually represented in books; but if adjusted as originally intended by Liston, and according to the directions I have given, no such untoward result can follow. Besides, the pressure of the perineal bandage occasions no uneasiness when directed upward; while on the contrary, if strained outwards across the groin to reach the splint, undue pressure is made on the tender integuments, veins, and numerous lymphatics of this region, and, above all, against the sharp edge of the adductor muscles. The foregoing objections fully apply to Boyer's splint; the pressure of the counter-extending belt cannot be borne, and it must displace the fragments if the fracture be situated high up. After the requisite extension has been secured, the next step is to turn a roller round the limb and splint, commencing at the ankle and continuing it to about the centre of the thigh: during this proceeding it is necessary that the limb be fairly supported, and not permitted to gravitate backwards. A few turns of a wide bandage are likewise made to encircle the trunk and upper part of the splint, and pinned to the counter-extending belt before and behind it. It only remains now to pass the screw through the socket, and attach to it the transverse piece of wood in the manner already described, and the apparatus is perfected, so as altogether to preclude the possibility of inversion or eversion of the foot and lower fragment. It will be observed, by a re-

ference to the plate, that the splint is raised at its lower end from the mattress, by the depth of the transverse piece of wood, and a thin pad fills the intervening space. By this arrangement the foot is somewhat elevated beyond the rest of the limb, and the returning circulation favoured.

Frequently, when a patient is under treatment for fracture of the thigh by the ordinary method with the long splint, he will complain of pressure at the heel, owing to the limb resting for a length of time on its posterior surface; this unpleasant contingency is entirely obviated by the simple employment of the screw as applied by me; for by a few turns of it any required elevation may be attained, and another annoyance is likewise removed by the transverse handle bearing off the weight of the clothes from the foot. Lastly, from the treatment by continued extension, as I advocate its application, I have never seen troublesome abrasions, relaxation, or weakness of the ligaments of the knee or ankle-joint to result.

Art. III.—*Observations on some Points relative to Continued Fever, together with Remarks on the Treatment of the Intestinal Affection by Injections of Nitrate of Silver.* By George Yates, Birmingham, Member of the Parisian Medical Society, Secretary to the Birmingham Medico-Chirurgical Society[a].

Although Birmingham is happily exempted to a great extent from continued fever, as compared with other towns which, like it, are densely populated, and with certain parts of the country more obnoxious to its ravages, still, the subject is one that has always occupied the attention of the profession, not only on account of the great mortality it annually occasions among the lower orders, but because of the various opinions and contending theories that have been raised for the purpose of solving the mystery overhanging its origin and progress. There is perhaps no disease treated by medical men, whether in hospital or private practice, which entails upon them more trouble and anxiety than the one under consideration, and so much uncertainty prevails as to the mode of treatment, that in many cases we either rely upon the expectant system, or, what is worse, we counteract, it may be by our excessive painstaking, the natural efforts in the right direction. But previously to entering upon an exposition of certain views as to

[a] Contributed to the Medico-Chirurgical Society of Queen's College, Birmingham.

the presumed nature of the course of the disease, I will make a few general observations.

From some experience, extending over a period of nearly three years at the Bedford Fever Hospital, my attention was directed to the circumstance of the protracted period before convalescence was established in certain cases, where a severe abdominal complication had been manifested, notwithstanding the adoption of different plans of treatment recommended by the highest authorities:—such as the administration of acetate of lead and opium by Dr. Bardsley, of Manchester, and Dr. Stokes; turpentine enemata and stupes, highly spoken of and used by Dr. Graves; leeches to the lower part of the abdomen and blisters, independently of the use of wine and of a tonic treatment, usually adopted during the continuance of debility. The abdominal complication constituted by the affection of Peyer's glands is too well known to be called in doubt; and though it cannot now be considered, as it formerly was by Broussais, to be the proximate cause of fever, yet it is so common an occurrence in many epidemics, and plays so important a part in the course of the disease, that it has naturally occupied much attention.

As medical science has progressed, it has been found that local complications of particular organs arise, and pathological changes have been noted, which, to some certain extent, have led to a solution of certain difficulties. Of these local complications, the general are, partial softening of the brain; mere congestion, independent of further alteration; opacity of the arachnoid, with softening of the cerebral structure probably arising from inflammatory exudation, as well as the simple non-inflammatory softening of the cerebral structure. The congestion just alluded to has generally coincided in my experience with severe pulmonary mischief, of which there are several forms,—such as hypostatic congestion; general engorgement, frequently considered as dependent upon inflammation, but which in many cases is nothing more than a passive congestion; hepatization, which sometimes affects the greater part of the lungs, or is observed in patches disseminated through their structure, which has been observed by me in several cases where the symptoms during life were more closely connected with cerebral complication, evidenced by heat of scalp, conjunctival injection, low muttering delirium, increased at intervals with frequent attempts to get out of bed. Though in cases where a cerebral lesion was observed, irrespective of mere congestion the probable cause of which has been referred to, the headach was more persistent, but without flushing, conjunctival injection, and heat of scalp;

the delirium was more violent and continuous; the pupils, one or both, being occasionally contracted before death; when a post-mortem examination showed the existence of extensive or partial softening, probably atrophic, from the remarkable paleness of the cerebral structure, and from the absence of all signs of inflammation in the membranes.

It was, I think, first noticed by Dr. Stokes, how rapidly the lungs were occasionally consolidated during the course of certain epidemics of fever, a few hours being sufficient to bring about this effect; and until within a recent period, this hepatization, as it was termed, has been considered the second stage of an intercurrent pneumonia. The appearance in many cases seems to justify this view of the matter: the lungs being friable, sinking in water, and resembling the structure of liver; which are the characters of the *hépatisation rouge*, or Laennec's second stage of pneumonia. It is a curious fact, if this be the case, that the third stage of the disease has never, I believe, been noticed in fever; and this circumstance, coupled with a peculiarity in one pathological specimen I observed, where the structure of the lung, instead of being friable, was so firm as to bear the strongest pressure without breaking down, raised doubts in my mind whether this alteration has been properly referred to its correct cause. Dr. Baly has noticed the same peculiarity in fever; and though the lobular pneumonia is somewhat analogous to it, yet the condition of the lungs in infants, who have not inflated the air passages, seems to partake more of its intrinsic characters,—atelectasis infantum. Dr. Stokes has also noticed an affection of the heart where softening has occurred, and the organ has become so flabby as for its apex to be easily invaginated when placed on its base, the structure presenting on section a glistening aspect. The diagnosis of this affection, and the peculiar indications it affords for the administration or otherwise of wine, are most ably treated by the same physician[a], but are beside the present inquiry.

In reference to the appearances observed in the abdomen,—ulceration of Peyer's glands occupies the most prominent place; and it, there can be no doubt, is of very frequent occurrence in fever, though from its insidious commencement and course it may escape detection in some cases, and, according to the best authorities, is not present in certain epidemics; but, as far as my experience goes, I can bear testimony to its unmistakeable presence, with three exceptions, in all the fatal cases during my residence in the Bedford Hospital, when it was observed

[a] Dublin Journal of Medical Science, First Series, vol. xv. p. 1.

in all its stages, varying from the incipient enlargement of the agminated glands and follicles in the small intestine to the existence of large ragged ulcers and distinct warts, associated with a disorganized condition of the mucous membrane, and attended in two cases with perforation. The mesenteric glands were usually found enlarged, and the lining membrane of the stomach and œsophagus was in one case of a dark reddish-brown colour; but ulceration of the latter, as observed by Louis, did not fall under my notice. The spleen was usually very friable, and easily converted into a soft pulp.

Whatever opinion may be entertained of the connexion of the abdominal complication by different authorities, whether in the light of cause and effect, or an accidental element in the disease, in the majority of cases it is certainly the cause of the long and protracted delay that too frequently is occasioned before convalescence is established; where the patient is harassed with diarrhœa, the tongue and skin remaining dry for several consecutive weeks; and emaciation and debility are not arrested by the generous use of wine, tonics, and nutritious diet; and even if the diarrhœa has ceased, there is frequently left behind a degree of tenderness which may be looked upon as a decided indication of latent mischief, and the more so if the femoral vessels on the same side are pulsating strongly. The appearance of patients who have been suffering from fever of some weeks' standing is so pathognomonic and familiar to the profession, that it is unnecessary to attempt to delineate it further semeiologically. Week after week passes without perceptible amendment: and even then, as is too often the case, the sufferer is left with some distressing ailment, as abscess in different parts, œdema, and, what is worse, sometimes with decided indications of confirmed phthisis. In many cases, where the abdominal complication is present, the character of the stools is peculiar in that there is an absence of fæcal matter, the dejections being watery, of a yellowish colour, occasionally mixed with mucus and blood; and one of the best signs in such cases is the re-appearance of fæcal matter, either in a liquid or solid form, in the stools, which assume a very dark colour, and are extremely offensive.

In the latter end of the year 1851, I had four cases of fever consecutively under my care in this town, in which the stools were of a character to leave no doubt in my mind, in connexion with other symptoms,—such as decided tenderness in the right iliac fossa, tympanitis, diarrhœa, &c.,—of the existence of the abdominal affection; and where, upon the administration of nitrate of silver in injection, after other remedies had failed, the

diarrhœa ceased, the tenderness was removed, and in the course of a period varying from six to twelve hours a solid, feculent stool, of a dark colour and very offensive, was passed, followed by rapid amendment. The immediate alteration in the cases was very remarkable, and the improvement so manifest, that I could not but compare it with the result in many other cases which had been treated in the usual manner. It is, I believe, to M. Trousseau that we are indebted for introducing injections of nitrate of silver in cases of entero-colitis, or dysentery in infants, with great success; and the same remedy is used at the London Dispensary for Diseases of Children.

It is the general belief that in fevers, in the first instance, a noxious principle is introduced from without into the blood, and that the mode by which such introduction is effected is through the respiratory apparatus. The early symptoms, such as rigors alternating with heat, and hurried breathing, would seem to indicate such to be the case, and the subsequent effects upon the nervous system, as the cephalalgia, tinnitus, lassitude, and pains in the limbs, naturally follow, and are explicable upon this supposition. The next point for inquiry is the further effect of the noxious principle upon the system, which I have endeavoured to show in the pathological changes to which the different organs are subjected, and ascertainable by post-mortem inspection, as well as in the alteration of the blood, which assumes a darker colour than ordinary, contains less fibrine (and what remains is imperfectly organized), besides being, in certain cases, remarkably unctuous, and staining the lining membrane of the vessels of a modena hue.

I shall now endeavour to point out in what manner I believe the same principle to be ultimately eliminated from the system. It must be obvious to many that the crisis remarked on certain days, as observed in the breaking out of a copious perspiration, or the marked appearance of lithates in the urine, is not often noticed at present, at all events not to the same extent as was stated to occur at former periods by the older physicians, and, if observed, not to be followed by any material and permanent benefit. A copious perspiration does often indicate no salutary change, but rather an aggravation of the mischief which is undermining the vital powers; and the urine is occasionally loaded with lithates in the very worst cases which terminate fatally. Dr. Latham was of opinion that the doctrine of crisis in fever, in the manner above indicated, was an exploded error, and Chomel, in his Leçons sur la Clinique Médicale, entertains the same views; it therefore becomes a ques-

tion for consideration whether another, but more complicated course, may not be adopted for the expulsion of the fever virus from the system; and if it can be shown that the peculiar lesion of the intestinal glands constitutes a means by which the poisonous material may be eliminated,—which though destructive of life if it exceed certain limitation, is yet conservative in tendency when moderated in intensity,—fresh interest will attach to this affection.

Two of the most rapidly fatal cases which I saw were peculiar in not presenting any abdominal lesion, and it was in these cases that the blood was so remarkably unctuous. In one, a few hours after death, the greater part of the integuments of the scalp, as well as of the neck and chest, was easily peeled off, the heart was extremely soft, and its apex easily invaginated. In the other the cerebral veins were congested, the medullary substance of the brain was of a dusky colour and less firm and elastic than usual, and the lower lobes of both lungs were greatly congested. It appears to me that, under certain circumstances which are involved in obscurity, the poisonous material not being eliminated from the system, either entirely or partially, through the agency of the skin or the intestinal tube, affects the whole of the circulating fluids, and induces local complications in different organs, as the brain, lungs, heart, and spleen, and perhaps in others that we are not aware of.

In Dublin in former years the cerebral complication was to be seen in an aggravated form; the series of cases in reference to it, detailed by Dr. Graves, are most graphically drawn, many of which were brought to a successful issue by his well-known treatment by tartar emetic and opium; success, however, was chequered by failure; and some of the cases, that, judging from the symptoms, one might have thought would be equally amenable to the remedy, disappointed his efforts. A case, remarkably analogous to those detailed by Dr. Graves, where the symptoms during life were referrible to cerebral complication, came under my notice, which was treated most successfully on the plan recommended by him, all the urgent symptoms having been completely removed; though at this most important juncture the patient, a young woman aged 17, was robbed of the chance of recovery by the unconquerable obstinacy of a relative persisting in removing her from the hospital to her own home, about twenty miles distant, when, unfortunately, she sank from exhaustion immediately after her arrival, having been compelled to sit up in the vehicle for some

hours, and no stimulants having been administered on the way. A medical man residing at Huntingdon sent me the following report of the necropsy:—

"Portions of the jejunum and ileum were inflamed; mucous membrane softened, but not ulcerated; lungs and heart appeared perfectly healthy; a little fluid was found in the pleural cavities."

In the above case the tartar emetic plan of treatment appears to me to have induced the redness and softening of the intestinal membrane, by which the elimination of the fever virus was possibly facilitated. In severe cases of fever, therefore, I am disposed to the opinion that the poisonous material seeks a vent from the system, and that the skin failing to meet this requirement, it is attracted to the mucous membrane of the intestines, but, chiefly from some inexplicable cause, to the agminated glands in the ileum, where ulcerative action is readily established, consequent upon their enlargement,—in the same way as the eruption of small-pox, after the peculiar virus has remained latent in the system for three days subsequent to the premonitory symptoms, appears on the skin and usually on the mucous membrane also. Previously to the elimination of the virus in cases of fever, severe local complications may arise, as I stated before, in the brain, lungs, and other organs, and the skin may be covered with maculæ, petechiæ, or the different kinds of eruption, so ably insisted on by Drs. Jenner and Ormerod; and in many cases a compensatory action going on in the skin seems sufficient for the purpose without the aid of the lining membrane of the intestine. Thus Dr. Watson observes, in his Lectures on Continued Fever, that "the inverse relation between the rash and the intestinal ulceration is remarkable, when the *one* is prevalent, the other is rare"[a]. Dr. Stokes has observed that the exhibition of a purgative in the early stage of fever is generally prejudicial,—can this be explained on the principle of its interfering with the natural efforts of the system? It will not for a moment be supposed that the intestinal lesion is not, in my opinion, one of serious gravity; though primarily it appears to me to have a conservative tendency, but frequently becomes of such importance as to require a special treatment. As instances of certain changes of a morbid character, set up conservatively for the purpose of checking another evil, Dr. Geo. Johnson refers to hypertrophy of the left ventricle of the heart independent of valvular disease, in the thickening of the walls of the intertubular capillaries to assist

[a] Practice of Physic, Third Edition, p. 745.

the Malpighian vessels to overcome the obstruction in cases of chronic desquamative nephritis, and hypertrophy of the same organ in connexion with obstructive valvular disease.

My object in using the nitrate of silver injections is to promote a curative process in the ulcerated glands of the intestine, —a lesion which, I shall endeavour to show, may induce secondary symptoms referrible to the brain and lungs, and become a source of fresh contamination of the blood, from the absorption of the fluids discharged from, and fæcal matter adherent to, the ulcers. A remarkable case was presented to my notice where the symptoms appeared at first to be principally referrible to the brain, the most prominent of which were,—a state of stupor combined with delirium and anæsthesia of the right upper extremity, followed by tympanitis and copious diarrhœa. A few hours after the application of a blister to the abdomen, the patient, a robust woman, aged 30, began to recover her consciousness, and on the following day a great improvement, to all appearance, had taken place; this remission of symptoms continued for about twenty-four hours, when the diarrhœa returned, the alvine evacuations actually pouring from her, but a slight abatement took place before death. The haggard expression of countenance so commonly observed in fever left no room for doubt as to the diagnosis; though, previous to her admission, the case had been considered as one of cerebritis, which the post-mortem examination completely confuted, as appears from the following details of the necropsy which I extract from my note-book:—

"*Head.*—On separating the calvarium a small quantity of blood escaped from the divided vessels; there was a little serum in the cavity of the arachnoid, which, with the exception of a very slight opacity in the portion investing the posterior lobes of the cerebrum, was perfectly transparent. On section of the medullary substance, which was of firm consistence, a few red points appeared; about half a drachm of clear serum lay in the anterior cornu of either lateral, and still less in the posterior cornu, and in the third and fourth ventricles; the different bodies forming the floor of the lateral ventricles, with the central parts of the brain, were perfectly healthy; cerebellum intact. A small quantity of clear serum lay in the lower occipital fossæ. *Chest.*—The right lung was congested, and on being incised, gave exit to a large quantity of frothy serum; the left lung had undergone a process of splenization rather than of simple congestion, being friable, of a dark red colour, and pouring out blood on compression; no adhesions existed in either pleural cavity; a small quantity of fluid, however, was found in the

left. Pericardium unadherent, and no fluid effused into its cavity; right chambers of the heart contained a large coagulum of colourless fibrine, and were, with the valves, perfectly healthy. Left ventricle somewhat thickened in its walls, the cavity suffering a proportionate diminution, probably attributable to the rigor mortis, no fluid or coagulum being present; valves, likewise, were perfectly healthy. The external surface of the organ was, to a great extent, coated with a thick layer of fat. *Abdomen.*—The central portion of the ileum presented upon its mucous membrane a number of small black particles resembling dust, which, for the most part, could be scraped off by a scalpel. Two ulcers existed on the mesenteric side of the intestine, of an oval form, surrounded by a thickened portion of mucous membrane, partly adherent to the subjacent tissues, partly separated and undermined; the mucous membrane, with this exception, appeared to be perfectly healthy till within sixteen inches of the cæcum, where was observed an abrupt commencement of the disease, indicated by numerous ulcers, and a gangrenous condition of the membrane itself. A few of the ulcers were observed on the unattached side of the intestine; several were confluent, the base being formed by the muscular tunic, which had undergone a process of thickening; the cæcum was of a dark brown colour, and extensively ulcerated. The ascending colon was of a still darker colour, and thickened, and presented beneath its lining membrane a number of elevations thickly conglomerated. The small points of ulceration in this portion of the intestine were innumerable. The sigmoid flexure gave way as the viscera were being removed, though no unusual force was used. No perforation of the intestine was observed; the mesentery was loaded with adipose matter."

The question for consideration seems, then, to be, whether the cerebral symptoms may not be regarded, in certain cases of fever, as centric, arising from a primary cerebral complication, or as eccentric, dependent upon a lesion of a remote organ, through the secondary contamination of the blood, consequent upon the absorption of deleterious products on the one hand, or constitutional sympathy from the reflection of irritation to the brain on the other. I forbear from quoting several other cases tending to the same conclusion, for fear of unduly prolonging these observations.

In cases of puerperal convulsions the irritation is justly considered, in a large majority of cases, to emanate from the uterus, and in some cases artificial delivery, and thereby the removal of irritation from this organ affords the only means of subduing

the convulsive paroxysm. In children, worms in the intestinal tube frequently give rise to various cerebral symptoms; and chorea and epilepsy occasionally take their rise from irritation in the stomach and bowels. Had paralysis coincided with the temporary anæsthesia, in the case above referred to, there would be greater reason for considering the latter symptom as dependent upon a primary cerebral affection, but this was not the case, and the post-mortem appearances, I think, bear out the opinion, that the intestinal lesion was more concerned, through the medium of the nervous system, in its production. The cessation of diarrhœa and tenderness in the iliac fossæ,—even the complete absence, from first to last, of tenderness in the same region, are not sufficient grounds to justify the conviction that the intestinal lesion is absent. In one case I remember there was no tenderness in the iliac fossæ, several examinations of the abdomen being made in the course of the disease, when the patient (a young man) was perfectly sensible, but the pressure was limited to those parts where the tenderness is generally located. My surprise, however, was excited at finding several large ulcers about the centre of the ileum, though none whatever in the lower third of the intestine, which was merely of a leaden hue. Without care, therefore, in consequence of the abdominal complication not being sought for from the apparent absence of symptoms, it may be completely overlooked, and set down as not existing.

With regard to the secondary contamination of the blood, and the consequent secondary effects upon the pulmonary circulation, Dr. Todd appears inclined to this belief, and I here subjoin an extract from a clinical lecture, published by him, on the subject of fever[a]: "It seems to me that the production of this state, with the enlargement of the mesenteric glands, is due, not so much to imperfect appropriation of food, as to the absorption of a matter from the ulcerated surfaces, which, circulating with the blood, exercises a poisonous and depressing influence,—a matter of the nature of, if not identical with, pus, which is absorbed by the lacteals, and perhaps also by the blood-vessels, but probably chiefly by the former, by which route it quickly reaches the lung, without passing through the liver, where it may contribute to the increase of the bronchial congestion and irritation which so constantly accompany the typhoid state. This view I have often broached at the bedside of patients suffering in this way."

In one of the cases under my care, in which the injections

[a] Medical Times and Gazette, for February, 1852.

of nitrate of silver proved so beneficial, the coincidence of an aggravation of pulmonary mischief, with an increase of the intestinal irritation, was very obvious, and a treatment directed to allay the latter was also successful in the mitigation of the former complication. The abdominal irritation in this case was relit by exposure to cold, imprudence in diet, and an overdose of castor-oil given by mistake;—marked tenderness being evinced in the iliac fossæ, to which it was limited, and followed by pulmonary irritation, which yielded shortly after the diarrhœa and tenderness were removed. According to Mr. Goodsir's report of the fever, as it occurred at Anstruther, the intestinal cases were generally attended with more or less bronchitis; the late Dr. John Reid, who has mentioned this fact, alludes to the efficacy of the acetate of lead in checking excessive bronchial secretion; and I think it an interesting subject for reflection, that this remedy, which is equally useful in the treatment of the intestinal affection so generally recognised, has been found also to exert a beneficial effect on the pulmonary mucous membrane.

It is not at all improbable that a continuance of the pulmonary mischief may, in its turn, react upon the brain by inducing congestion in that organ, from the difficulty experienced in the return of the blood from the venous system. There can be no doubt that the secondary cerebral symptoms resemble the primary, though they may, I am disposed to think, be differentiated; and I am led to this remark with a view to express with others the highest opinion of the efficacy of the tartar emetic and opium plan of treatment of Dr. Graves in certain cerebral complications; at the same time to point out that in other apparently similar cases it altogether failed in producing any remedial effect. The following is an illustration of the failure of this treatment, notwithstanding the analogy to Dr. Graves' cases:—Lewis Bartram, aged 32; ill for a fortnight before admission; headach, heat of scalp, skin hot, respiration hurried, diarrhœa, tongue trembling, but moist: diarrhœa afterwards ceased; skin continued dry and hot; no sleep; delirium, followed by subsultus; pallor of countenance; respiration greatly hurried at intervals; apparent improvement on the day before his death, patient having slept a little, and the tongue being less tremulous; pupils dilated before death; evacuations involuntary. *Post-mortem Appearances.*—Considerable congestion of the cerebral vessels; no diminution or discolouration of the cerebral structure; hepatization of the anterior part of the upper lobe of the left lung; ulceration of small intestines.

I have previously observed that, though the intestinal ulce-

ration is probably conservative in tendency, yet that, abstractedly considered, this lesion ordinarily requires the most careful attention of the practitioner. The frequent failure of the ordinary means for preventing the disease from terminating fatally, and the analogy existing, to a certain degree, between the gastro-enteric affection and entero-colitis, or dysentery in infants, induced me to make trial of the nitrate of silver, in the form of injection, in the proportion of from three-fourths of a grain to two grains of the nitrate, with five minims of the tincture of opium, and a small quantity of thin starch. The cases in which this treatment by the nitrate of silver injections was adopted, occurred in a man and three of his children, between the respective ages of 3 and 11,—two boys and a girl, the latter of whom had been ill three weeks before I saw her; the two boys having been under my care shortly before she was attacked, and, as I was absent from Birmingham at this time, a medical friend was called in, who consented to my making trial of the same remedy in her case. The local action of the nitrate upon the rectum would seem to exert a beneficial influence along the track of the intestinal tube, as demulcents, when taken into the stomach, exercise a soothing effect upon the irritable lining of the air-passages, in catarrh or bronchitis. It will be obvious, should these views be admitted, that tartar emetic and opium on the one hand, and nitrate of silver injections on the other, as administered singly for a very different purpose, should only be used according to the effect sought to be obtained; and discrimination is therefore necessary in the use of either the one or the other plan of treatment. It may be necessary to repeat the injection if the intestinal irritation be reproduced, and other remedies in general use will be adopted to meet the exigencies of individual cases, great care being taken to prevent exposure to cold.

Since this paper was written, I have looked over some notes taken by me at the Meath Hospital, and found one case which was under the care of Dr. Stokes, where there were decided indications of an intestinal lesion (which was treated by poultices to the abdomen, leeches, blisters, followed by mercurial dressing), attended with pain in the head and delirium. My friend, Dr. Heslop, assures me, however, that during his attendance at the same hospital he did not succeed in the numerous post-mortem examinations at which he was present in finding one illustration of ulcerated Peyer's patches, which was looked upon at that time as a pathological rarity. A similar statement has been made by the late Dr. John Reid, who remarks, "that during the whole three years and a half that he

conducted the post-mortem examinations in the Edinburgh Infirmary, in no single case did he observe in any individual who had been visited with fever while residing in Edinburgh, anything resembling the changes described as occurring in the lower part of the ileum in typhoid fever," though it appears that five cases, which proved fatal where this lesion existed, were brought from the neighbourhood of Linlithgow, notwithstanding that in several other fatal cases, from the same district, the lesion was not observed. He then proceeds to observe: "Whether or not the typhoid and typhus fever be identical or different diseases, we shall not venture at present to give an opinion; but if it should turn out that they are specifically the same disease, it would prove an interesting subject of inquiry to endeavour to ascertain why the typhoid form of fever should for several years past have never been found in Edinburgh, while it existed at Linlithgow, Anstruther, and other places in Fifeshire"[a].

I have in the foregoing observations noticed the fact that, in two fatal cases in which I conducted the post-mortem inspection, no intestinal lesion existed, and in another, which had been treated for the cerebral complication by tartar emetic and opium, of which I obtained particulars of the necropsy, the lining membrane of the intestines was inflamed and softened, but not ulcerated, and yet, at the same time these cases came under observation, there were others which ran a very different course, and presented the intestinal lesion in a marked degree. Sometimes the glands of Peyer were enlarged, but not ulcerated; in some the ulceration was slight, in others very considerable. These statements tend to show that though in Edinburgh and Dublin it is not usual to meet with the intestinal lesion, still it does occur from time to time, and that although it was common to observe the intestinal lesion at Bedford, yet it was absent in certain cases about the same period. In the former places the exception was in finding, in the latter, in not finding it. I do not pretend to unravel the mystery further than I have attempted in the observations I have already made; but I cannot divest myself of the idea, that the purgative plan of treatment, and exposure of the patient to the influence of cold and damp, materially interfere with the efforts of nature to remove the virus from the system in the manner I have hinted at; and, as stated above, Dr. Stokes seems to confirm this observation to some extent by his disapproval of the use of purgatives in the early stage of the disease.

[a] Physiological, Pathological, and Anatomical Researches, p. 500.

Art. IV.—*Notes on the Urinary Diseases and Morbid Conditions of the Urine in Children.* By Christopher Fleming, A. M., M. D., M. R. I. A., Surgeon to the Richmond Hospital, Examiner on Medicine and Surgery in the Royal College of Surgeons of Ireland, &c.

Diseases of the urinary organs, so common of occurrence in the more advanced periods of life, are occasionally met with in children, modified to an extent to entitle them to separate consideration. Difficulties often attend their investigation, and the symptoms which characterize their presence not unfrequently escape notice, as well from the carelessness of the ordinary attendants, as from the oversight of the practitioner. Yet they are a painful, a serious, and a distressing class of affections, and neglect in diagnosis at their earlier formation may lead to protracted misery, and often to incurable disease,—if life in the interim be not compromised. The principal varieties of these diseases at this period of life to which I wish to direct attention are,—irritable bladder, incontinence of urine, and retention of urine; and, in connexion with them, those morbid derangements in the secretion of this fluid, attention to which is often so valuable an assistant to our practice. These urinary complications are met with as attendants on febrile diseases—whether exanthematous or not—and on their sequelæ; and they are not unusual accompaniments of those chronic ailments, both glandular, cutaneous, and gastro-enteric, so very common at this period of life. It is, however, to affections distinct from these, that I shall now direct a few observations. I have met with them at all periods of childhood, during lactation and up to puberty, and either sex may be attacked by them; although I am of opinion, that they occur more frequently in boys, between the ages of eighteen or twenty months, and eight or ten years. At an earlier age than the former, they are very rarely, if ever, recognised, for reasons too obvious to specify, unless some palpable alteration takes place in the character or in the amount of urinary secretion.

Irritable Bladder.—Irritable bladder occurs much more frequently in young children than would at first sight appear, and this, where the irritability is not the consequence either of inflammation or of organic disease, although occasionally attributable to some abnormal defect. The mother or nurse of the child so affected states that the child is constantly applying the hand to the organs engaged; that it appears to suffer pain during micturition; that the act is frequent; that it is urgent, but when

the urine has passed off the child appears relieved; that often, if the urine falls on the floor or clothes, it rapidly becomes muddy and whitish, and it is even stated by some, that it is so at the moment of being passed; that when the child sits down for such purpose, it has an inclination to remain longer than is requisite, and in some cases, that there is a disposition to prolapsus of the rectum, from the forcing and straining attendant, and very frequently a discharge of bloody mucus from the rectum takes place; that these symptoms have continued for some time, notwithstanding the exhibition of medicines to regulate the bowels and produce other ordinary effects; that the child is losing strength and wasting in flesh; that the appetite is most precarious, and that there is a great desire for drink; that the quantity of urine passed is very variable, sometimes deficient; that its quality is equally changeable, at times being pale, at others, deep in colour, and again, clear and often muddy, and with copious sediment.

If accurate inquiry is now instituted, it will be found, that many such children are born of gouty parents, or of persons much subject to dyspepsia, and that they are children whose diet and habits of life are irregular; and in the humble walks of life that they are, in addition, irregularly clad and irregularly cleansed: such are by no means of unfrequent occurrence. The quantitative and the qualitative analysis of the urine satisfactorily explains the symptoms; and attention to the physical condition of this secretion, to its chemical constitution, and to the appearance of the deposits—particularly the deposits of rest—assisted by the microscopic characters of the latter, point out the curative indications which are suitable to each variety of case. It is beyond all manner of doubt, that, as in adult age, many practical hints can be taken from attention to the general constitution of the urine in the surgical diseases of these organs, and that in the child the normal essential constituents of this important fluid may be increased or diminished, and that abnormal ingredients may be superadded. We have here the lithic, the oxalic, and the phosphatic diatheses, and each has its special influence. In fact, with few exceptions,—and the presence of sugar in the urine of children is one worthy of note,—there is no derangement of the urine found in the adult which I have not also found in the child, in its most exaggerated form, both as regards the disproportion between its normal constituents, and the introduction of abnormal substances. I feel perfectly satisfied that attention to these details, as subsidiary means, will be found of value in the diagnosis and treatment of many of the diseases of children,

and especially in those cases of cerebral complication which so repeatedly puzzle the practitioner, and where the quantity of this secretion, on the one hand, is materially diminished, or, on the other, increased.

With a view to the practical study of the morbid condition of the urine, as auxiliary to the diagnosis and treatment of diseases of the urinary organs in the child, I find it difficult to condense my remarks so as to avoid the introduction of any irrelevant matter, and at the same time to escape the charge of an attempt to undervalue those more minute particulars to which, justly, much importance is attached. In my lectures on these subjects, I have been in the habit of directing attention to the colour and smell of the particular specimen under examination, to its chemical re-action, and to its density; and I have always attached very great importance to the *deposit of rest, as to shade and outline,* and to the transparency or otherwise of the supernatant fluid. From an analysis of these several leading features of urine I have derived the greatest advantage, and even, in the absence of any microscopic examination, have been enabled to decide in very many cases, with sufficient certainty for practical purposes, on the peculiar nature of the deposit. Of course in some, particularly the "non-crystalline organic deposit," the assistance of the microscope is often indispensable; but in children they do not constitute the majority of the cases met with. As attendant on the "irritable bladder," I would say that, according to the classification of urinary deposits by Golding Bird, those of uric acid and the urate of ammonia and of oxalate of lime are particularly frequent in occurrence; and that, next in order of frequency are conjointly or separately with these "the non-crystalline organized products," such as blood, pus, occasionally mucus, but very often indeed vibriones. It would be too great an occupation of space and of time to enumerate the many cases I have witnessed, as illustrative of these statements; they are of almost daily occurrence. I do not deny that phosphatic deposits are to be met with, but these deposits do not occur, under ordinary circumstances, as a substantive deposit in the urine of children. The prisms of the neutral triple phosphate are to be seen conjointly with the crystalline deposits above specified, just as in adults, but it is very rare indeed to meet with them as solitary deposits, although so frequent in advanced life; and it is equally rare to find them combined with that physical and chemical condition of urine almost necessarily present under such circumstances. Indeed I find it difficult to bring to my recollection—unless under the most aggravated form of vesical and renal disease,

complicated with phosphatic calculus in the child—that excessive secretion from the mucous membrane of the bladder which takes so very prominent a part in the formation of such deposit in advanced life. Amongst the numerous cases of urinary disease I have witnessed in the child, such is excessively rare, and it is equally rare as a symptom of calculus in the child. There was in one case a source of deception, which was by the merest chance unfolded to me, and which, perhaps, may be noted as confirmatory of Sir Benjamin Brodie's opinion as to the the special source of those phosphatic salts in the urine.

In May, 1852, a boy, aged three years, was brought to my study by his mother, in great alarm from the suffering the child had endured for some weeks in passing urine. There was frequency and urgency, and so much forcing and straining as to produce distressing prolapsus ani. The urine was largely loaded with lithates, and contained a remarkably tenacious mucous deposit, deeply coloured with blood, and adherent to the glass. I found in it numerous blood discs and large crystals of the triple phosphate. Symptoms not improving, I felt justified in sounding the child, which I did with a silver catheter, and whilst the urine was escaping, a severe paroxysm, resembling a fit of the stone, occurred, during which a considerable quantity of gelatinous mucus escaped from the rectum. I collected the urine drawn off through the catheter in one test-glass, and the discharge from the rectum in a second. The urine was acid, the latter alkaline; the former was loaded with lithates interspersed with some crystals of oxalate lime, the latter, in addition to mucus, blood globules, and epithelial scales, was studded with large, distinct, triple phosphatic prisms. I merely mention these details incidentally, as interesting and not unimportant phenomena, and particularly in connexion with the statement of Sir Benjamin Brodie already alluded to. They were to me then novel, and I took the opportunity of showing the microscopic appearances and the specimens to my colleague, Dr. Hutton. I have since been enabled to confirm them.

I have said that the lithic acid and lithate of ammonia deposits, and also that of the oxalate of lime, are the most frequently met with in children, and they will be found to be productive of most decidedly distressing urinary symptoms. I have often found these deposits present conjointly; very often the oxalate of lime and the urate of ammonia, the latter cloaking the former, unless carefully looked for. I have found the red sand, as the lithic acid is sometimes termed, in the child, but it is

far more frequent to find the colourless, or nearly colourless, crystals of lithic acid, and all are met with of every variety of shape and form, and they are to be seen in the children of the poor as well as of the rich; and really it does not appear that diet very materially influences their presence or their character. I have a boy, aged about 7, now in hospital, with suspected calculus in the bladder, and in him numerous crystals of pale lithic acid exist in combination with oxalate of lime; whilst in another ward in the same hospital, there is a boy, somewhat about the same age, a patient of Dr. Hutton, in whom the red sand is visible to the naked eye in the test-glass, floating through the urine, and under the microscope the deep orange crystals are to be seen distinct, and in large aggregated masses. It is in this class of deposits, and in that of the oxalate of lime, that the surgeon requires to be more circumspect, as the physical and chemical characters of the urine are often not remarkable. The colour is in such cases often pale; the density very low, so low as 1007 to 1010; the deposit a mere tomentous, semitransparent cloud, but one which will not escape detection by the practised eye. The suffering experienced in some cases of this nature is really very great; and if the child happens to have a long narrow prepuce, or an abnormal opening in the urethra, he may be put to unnecessary torture from inattention to the morbid state of the urine. I have known such cases:—one, a fine child, the only son of a fond father, who lived freely, and thought the child could not do better; the other, a boy aged three years, with hypospadias, from which the child had not previously experienced any visible inconvenience. In each the usual traces of symptoms of irritable bladder existed; in each, the ordinary clear condition of urine diverted attention from the examination of its actual state; and in each, its normal restoration caused the subsidence of all annoyance. I do not dwell on the lithate of ammonia deposit; its characteristic appearance is too obvious to require any comment. I shall merely add in conclusion, as regards it and the other crystalline deposits noted, that when from their continued presence they produce local or general irritation, they demand the watchful care of the practitioner to put rigidly in force those dietetic and therapeutic means which are laid down in systematic treatises on the subject; and if the symptoms do not yield to such treatment, he should search for some local cause either in the bladder or in some portion of the organs implicated; and he should also bear in mind, that such character of urine is the most likely to lead to the formation of stone in the bladder, as proved by

its composition in the child, and by the fact of its being the most common attendant on its presence when found there; and that hence two practical lessons should not be lost sight of, namely, to alter, as quickly as can be effected, this morbid condition of urine, and to suspect the presence of calculus, should it be obstinate.

The cases in which we meet with blood, mucus, pus, or epithelium in the urine of children, apart from general disease, or as isolated or substantive urinary affections, are comparatively rare. In the ordinary diseases of children, acute and chronic, urinary deposits of this class are to be constantly found, and a knowledge of their presence is most valuable. The surgeon should, however, be prepared for the fact, that some cases will present themselves, and these by no means few, where no such complication exists. I have known boys pass blood, and in no small quantity, from the bladder, and yet they were apparently enjoying excellent bodily health, and, in the intervals of the attacks of hematuria, free from any appreciable urinary irritation. The very identical statement may be made as regards pus. The history of a few cases will illustrate this.

A boy, aged about nine years, fell from a height, and, amongst other symptoms, it was observed that his urine was bloody. It was supposed to be the result of the injury, and yet the boy complained of no local uneasiness, neither did he manifest any local lesion to account for such complication. I doubted much the statement made, when the child mentioned that on two or three former occasions, within the past year, previous to the accident, he had observed his urine similar in colour, without being able to attribute it to any particular cause, and that the urine spontaneously resumed its natural appearance. I watched the progress of the case, and made the boy pass urine in my presence. It was as dark as coffee; and, on examination, was found to be loaded with blood globules. The result proved the accuracy of the boy's statement.

I have notes of another case where intermittent attacks of hematuria (the blood being of a bright arterial hue) occurred in a boy aged between six and seven years possessing all the semblance of health, and where the hematuria was provoked by the most trifling causes, was unaccompanied by pain or uneasiness of much moment, and ultimately almost spontaneously subsided.

Although it would appear from the report of these cases that blood may be present in the urine of children, and in large quantity, and yet be productive of not much local or general

distress, nay, more, not leading to any serious results as far as can be ascertained, we are yet to keep in mind that bloody urine may be pathognomonic of renal disease, and that disease sometimes malignant. However, a train of symptoms will manifest themselves in the progress of such cases, which must necessarily lead to suspicion. I have examined the urine of a child, containing a large amount of blood, the child dying under twelve months old of encephaloid disease of the kidney, and during life the urine being almost constantly more or less tinged with blood. The morbid specimen in this case was exhibited by Professor Montgomery, at one of the meetings of the Dublin Pathological Society. Blood *singly*, however, is a rare addition to the urine of children unless the result of injury, or unless traceable to calculus in its passage along some portion of the urinary tract: nevertheless it is a very rare attendant on stone in the bladder in the child.

With regard to pus, it is far more frequently met with in the urinary diseases of children, and it is surprising how tolerant both the general health and the bladder are of its presence. Unless very particular inquiry is made by the surgeon into the history of the case, such a complication will wholly escape detection. Cases of this kind occur in both sexes. In girls, as in grown up females, very considerable circumspection is requisite as to accuracy of diagnosis. Indeed I should have made a similar remark as to hematuria when it occurs in girls, but this caution is so palpable that it merely requires a passing notice.

It is otherwise, however, with respect to purulent urine. To be accurate, when the affection is persistent and obstinate, local inspection must be made in the female child, as morbid secretions from the vulva and vagina are by no means of unfrequent occurrence in such children if badly cared, and the urine, "in transitu," will be loaded with pus globules, with mucus, and even with an amount of phosphates sufficient to render it neutral or alkaline, and this quite apart from urinary diseases, although attended with much urinary irritation.

The following case is a good illustration. A girl, aged about ten years, was brought to the Netterville Institution, the mother stating that she suffered from pain and frequency in micturition, and that her urine was offensive in smell and whitish in colour; that her general health was tolerably good, but that her present ailment was so distressing as to prevent her from attending school; that her bowels were regular and her appetite fair. No other particulars were noted by the mother, though she appeared to be an intelligent woman. I directed

some simple aperient, and desired that some of the urine passed on the following morning should be brought to me. I took the following notes of it:—Colour, muddy and whitish; odour, offensive and sour; re-action, almost alkaline; density, 1015 to 1018; deposit of rest, opaque, greenish-white stratum about one-quarter of an inch in depth at bottom of glass, and with defined upper surface; supernatant fluid clear and of a light straw colour.

The density of the specimen, and the colour of the supernatant fluid, led me to suspect that the origin of the pus was not from the urinary tract. Under the microscope, pus globules were distinctly evident; there were also some mucous globules, and a large amount of epithelial scales; amongst these were interspersed granular masses of phosphate of lime, and some few crystals of triple phosphate prisms.

On the next visit I made more particular inquiries as to the presence of any discharge from the vagina, and, receiving no satisfactory answer, I examined specially, and found the mucous membrane of the vulva and the whole pudendum swollen and villous, and absolutely soddened with fetid sero-purulent discharge. A drop of this under the microscope showed myriads of pus globules, epithelial scales, and granular masses of phosphate of lime. It restored the blue colour to reddened litmus. Now, drawing off the urine through a catheter, it was found acid, and free from more than a few pus globules, but loaded with lithates[a]. Attention was paid to the local affection; astringent lotions were directed, and cleanliness enjoined, and in a short time the vesical symptoms disappeared.

Here, then, is a source of pus in the urine which should command attention. It must be inquired into. From what cause I know not, but details will not be voluntarily communicated by child or parent. Irritability of the bladder in girls may arise from another source than that of general engagement of the vaginal mucous membrane in the secretion of pus. The quantity of pus may be more limited, but yet pus globules will be distinctly visible. I allude to an ulcerated fissure of the vagina, resembling a similar affection engaging the rectum in the adult. The agony attending this can hardly be described or exaggerated: the principal suffering is referred to the bladder, and the pain during and after micturition is most acute. It is also quite intelligible that the whole mucous membrane of the vagina, in consequence of this partial ulceration,

[a] In adult life, where leucorrhœa in females is attended with vesical irritation, I have derived much assistance in diagnosis from a similar proceeding.

may become secondarily engaged, and that the purulent secretion will be proportionably profuse.

Here, again, the urine gets its morbid properties from the disease notified, and the cure of it insures the healthy function and secretion of the bladder. As far as my experience is concerned, however, cases of purulent urine in children occur more frequently in boys than in girls. They are, in very many instances, strangely tolerant cases, and strangely obstinate; some of them have a resemblance to those cases of hematuria I have noticed, as being somewhat intermittent in their character, and in not being productive of any considerable local or general irritation. I may instance the following case:—

A boy, aged about twelve years, rather delicate in appearance, and somewhat strumous in aspect, applied to me at the Netterville Institution, complaining of irritability of the bladder, and describing the urine he passed as having the colour of milk diluted with water, or muddy whey. He stated that such had been the case, with irregular intervals of a freedom from pain and clearness of urine, for more than twelve months, but that he was, notwithstanding, obliged to leave school in consequence of the irritability of his bladder: that he could only attribute the attack to damp and cold. I tested and examined his urine. It was loaded with pus globules to an amount so great, that the deposit of rest occupied nearly half an inch of one of my ordinary test glasses,—namely, between four and five inches in height, and about one inch in diameter. Yet the boy did not appear to suffer materially in general health. I procured his admission into hospital, and examined his bladder. I could not detect any local cause to account for his complaint. He left the hospital benefited by the exhibition of uva ursi, alternated with buchu and the mineral acids, but he is not cured. The pus I can always detect in the urine, and it is liable to recur with intensity at irregular periods from different causes, but particularly damp and cold. He appears to attach little importance to its presence, the irritability of the bladder being slight, and his general health good. Through the kindness of my colleague, Mr. Adams, I have at present a case under my care, in the Richmond Hospital, in which this purulent condition of the urine exists. The subject is a boy aged seven years; and, when his prolonged sufferings are borne in recollection, it is absolutely astonishing to witness the almost perfect state of his bodily health. His symptoms are very severe, and contrast remarkably with those, comparatively mild, in a boy in an adjoining bed with calculus in the bladder, under the care of Dr. Hutton. The attendant irritability of the blad-

der is extreme, so much so, as to be almost incessant. The urgency to pass water is great; the agony excruciating towards the end of micturition, and the act only tolerant in the sitting posture. The pain he describes as a cutting kind of pain; he refers it to the bladder and to the glans penis, and tries to relieve himself by pulling and pinching the prepuce and end of the penis. The child moreover states, that there is often a sudden interruption to the stream of urine, and that by changing his position it recovers itself, and then dribbles off. In observing the passing of the urine, its muddiness throughout the whole act of micturition is obvious, and the quantity discharged is very variable, but always small. There is no incontinence; there is no prolapsus. The penis is somewhat largely developed for the age of the boy. He complains of no pain or uneasiness in the lumbar region. I may add, he has a symptom which, in cases of this description, I have not unfrequently observed, namely, great tenderness on pressure and on percussion in the supra-pubic region.

The disease is stated as being of more than twelve months' duration; and the boy, who is very intelligent for his age, is disposed to attribute the supervention of the attack to his being obliged to keep his bladder painfully distended during school-hours; that when he had the opportunity of emptying it, he required to force and strain considerably, and that often he could not for a time discharge any urine; that gradually the present train of symptoms set in, and became more intense; and that his urine has been often mixed with blood, and latterly has become of a whitish colour. Such is the history of the case of this poor child, who has been admitted into hospital whilst these pages are passing through the press. I have intentionally given them in detail, as being admirably illustrative of this peculiar form of irritability of the bladder. The character of the urine I have carefully noted, and it is that which will be found most usually present in such cases. It was examined within a few hours after it was discharged, and was as follows:—Colour, muddy and whitish; re-action, acid; density, 1010 to 1012; deposit of rest, an opaque, greenish-white stratum, abruptly defined at its upper surface, and about one-fourth of an inch in depth at the bottom of test glass. Supernatant fluid almost aqueous, nearly transparent, and, within a limited period, uniformly miscible with deposit. Under the microscope, numerous pus globules visible. No fibrinous or tubular casts; no epithelial *debris;* no phosphatic deposit.

As a precautionary measure, the bladder was examined by Mr. Adams, with a view to the presence of calculus, but none

was detected; and I stated beforehand that such would most probably be the case, from the consideration of the peculiar morbid condition of the urine, with the existing symptoms, although the rational signs of stone appeared very prominent.

I do not for one moment attempt to assert, that stone in the bladder, when attacking children, may not be accompanied by a purulent condition of the urine; but I am certain that it will occur very rarely, if ever, where the character of urine, noted in the case just detailed, is found to be present. Purulent urine did exist in the case I am about to allude to, but that purulent character was derived from a source external to the urinary apparatus, or supposed to be so.

A boy, aged five years, was admitted into the Richmond Hospital, under the care of Dr. Hutton, with symptoms of vesical calculus, and with a constitution so shattered by protracted disease that he only survived his admission a few days. In his bladder there was a rough calculus of oxalate of lime, about the size of a nutmeg; and in the left ureter, about its middle, an oval, ulcerated opening, communicating with an extra-renal tumour on the same side, full of fetid and purulent urine. The particulars of this case are given by Dr. Hutton in the Proceedings of the Pathological Society, and will be found in the Reports printed in the sixth volume of the present series of this Journal. From the highly inflamed state of the lining membrane of the bladder, as delineated in a drawing illustrative of the pathological appearances, it is quite evident that it did not exercise any prominent part in the secretion of the pus; and I have no doubt that the urine contained, in addition to pus, other characteristic organic deposits, both in a crystalline and in a non-crystalline form, which would have led to an opinion as to the nature of the calculus, and especially when it was not coated with phosphates.

Such examples of blood and pus in the urine of children are rare, compared with their frequent occurrence in adult age and advanced life. They are yet worthy of note, as being, in many instances, so strangely tolerant and intermitting, demanding careful inquiry and investigation as to their origin and cause.

I have often thought that purulent urine was occasionally vicarious in the child as in man, and especially in those pyogenic conditions of the system so common in the earlier periods of life, as evinced by glandular suppuration and chronic abscess. From the patients to be dealt with, it is not easy to carry out investigations on this subject accurately, but I have reason to think I have seen cases of the kind. I do not wish, however,

to speak too confidently on the matter, as the statements of attendants cannot be depended upon, unless the specimens of urine are procured with great care,—and this is as requisite in private as in hospital practice,—and unless they are minutely examined under the microscope. Copious deposits of urates, in the cases I allude to, are by no means unusual, and general statements made respecting the external characters of the secretion would be deceptive. This investigation may be more interesting in a physiological than in a practical point of view, but there are cases in which our prognosis must be very materially influenced by it; at all events they occur in advanced life.

Here a question of vast practical importance suggests itself as regards the source from which the urine acquires its purulent character; and the same question may be asked as regards blood. Too frequently here, the symptoms which the French term "commemorative symptoms," are so defective in the cases of children, that it is very difficult to solve such questions. A great deal must, therefore, depend on the accuracy of observation of symptoms as they present themselves.

In hematuria there are palpable cases of injury where a confident opinion can be given; but diseases are our present object. In the strictly surgical application of the term, renal hemorrhage is a rare disease in children. One case has been noted where malignant disease of the kidney originated it. Again, the symptoms of nephritis and nephritic calculus are as obscure and as equivocal as they are rare in children. Pyelitis is equally rare; so that the subject is surrounded with very considerable difficulty. I have experienced great assistance in diagnosis from attention to *the condition of the urine as it escapes in the act of micturition*, and afterwards to the prominent features in its examination notified. *The uniform miscibility of blood or of pus with urine, whilst passing from the urethra, is no invaluable guide in estimating their source;* the peculiar colour or tinge of the former *then*, and when *the deposit of rest* forms, is equally so; and as regards pus, it is beyond all manner of doubt that the surgeon will acquire much information by attention to similar details, though apparently trifling. He will see that in nearly all cases of purulent urine in children, the change in the fluid is obvious throughout the whole act of micturition; and this alone, independent of the examination of its morbid condition, will lead to more than a suspicion as to the source and extent of disease. In the case of the boy at present under my care in the Richmond Hospital, I apprehend there is a complication of renal disease, although no complaint

is made of any lumbar pain or uneasiness, and no particular fulness or tenderness exists on examination. Pathology teaches us how deceptive symptoms are as to the actual existence or site of organic lesion of the urinary apparatus even in the adult. In a case of irritability of the bladder in the adult, I have found the kidneys extensively diseased and the bladder free from disease, although the latter was nominally the seat of all the suffering of the subject of it. The same occurs in the child. Irritable bladder in the child, accompanied by purulent urine, has in some instances been found to be attributable to tuberculosis of the kidney, and not a trace of disease in the bladder existed.

In other instances, again, this same form of disease, as now termed, has had its seat in the vesical mucous membrane and in the submucous tissue, forming large prominent tumours, of varied consistence, projecting into the bladder, which was proportionably contracted, with its mucous membrane congested and villous in some cases, in others frayed and ulcerated to a greater or less extent and depth, and presenting an appearance very different indeed from that trabeculated or columnar condition accompanying ordinary forms of disease in the adult. This condition of the bladder is not isolated; the kidneys partake of the same character of disease, and ultimately the sufferer must fall a victim to it singly, or conjointly with more general tubercular development[a].

This is, however, the extreme case, but others are to be met in which disease is limited to some one portion of the bladder, and where it is reasonable to suppose the affection is curable. In our prognosis we will be materially assisted by attention to those conditions of the urine noted in the cases detailed. It must be most unfavourable when the combination of pus, of blood, and of mucus co-exists, or even of blood and mucus, and especially if the density of the urine is low, and continues so; if its colour be aqueous; the smell fetid; the re-action alkaline; and the deposit phosphatic; and if the morbid conditions of the urine are attended with lumbar or nephritic pains, and general symptoms of urinary hectic. These symptoms are not peculiar to irritable bladder attended with purulent urine and referrible to the form of disease described. Similar symptoms will present themselves in cases of calculus, where the phosphatic diathesis predominates, and hence great caution is required in the diag-

[a] There is a preparation in the Museum of the Queen's College, Belfast, which shows these morbid appearances; and I believe there is one also in the College of Surgeons here. The disease resembles much a similar affection in the rectum of young children, and is decidedly strumous in its nature.

nosis, lest the operating surgeon should confound them, and thus materially compromise his character. I could bring forward cases where the operation of lithotomy was declined, from the conviction that the rational symptoms of stone, though strongly marked, were all attributable to general urinary disease, in the absence of calculus, as proved by subsequent post-mortem examination; and others, where persistence in opposite views led to most distressing and unsatisfactory results, from non-detection of stone after the operation of lithotomy; and equal ill success as regarded it on the fatal termination of the case.

Within the last two years two cases have occurred to my knowledge, in which the operation of lithotomy was declined, from the impression that this special form of disease existed to the exclusion of stone in the bladder. In one of the cases the boy was aged ten years. The rational signs of calculus were particularly well marked, and, amongst them, the penis was most remarkably enlarged. The paroxysms exactly resembled those attendant on a fit of the stone. The urine was muddy whilst being passed, and bloody towards the end of micturition. Its density was 1005 to 1008; its re-action feebly acid; its deposit, characteristic of blood, pus, and mucus: the latter so considerable as to cause firm adhesion to the test glass. The pus globules were in abundance, also the blood. The diagnosis given was disease of the lining membrane of the bladder, and renal complication. The boy died of urinary hectic. The bladder exhibited marks of extensive disease, implicating the mucous membrane, which was extremely ulcerated in different portions. The kidney contained strumous abscesses in isolated patches; not a trace of stone. As regards the second case, I believe the child is yet alive, but the symptoms of stone are so characteristic that is with some difficulty the disposition in the surgeon to operate is controlled. In neither of the cases were the physical signs of stone manifest.

In concluding these remarks on irritability of the bladder, as connected with morbid urine, I may add, that on very many occasions I have been enabled to trace the presence of vibriones in the secretion, and that I have detected these animalcules most frequently in deposits demonstrative of the lithic acid diathesis. They are detected with the greatest ease; very little care is requisite to place them under the field of the microscope, and the only caution required is to bear in mind that they are cloaked in the muddy deposit of the urates. I have so repeatedly found them immediately after the urine has been passed, that I cannot but entertain the opinion that they come

ready formed from the bladder in not a few instances. I have seen them in purulent urine, but they are far more common in the lithic acid, or in the oxalate of lime diathesis, and particularly in the children of the poor.

It is unnecessary to state that irritability of the bladder is no uncommon attendant on the ordinary worms of children; and I may add, that the remedy I find very beneficial in the case of vibriones I have found equally so in these parasites; I allude to creasote. I have been in the habit of giving it for the last few years, in cases of the kind, in combination with the common aperients of children, and with very great benefit; and in the irritable bladder of children I constantly direct it, with or without calomel, according to circumstances.

In dispensary practice these urinary affections are not very manageable; indeed it is not to be wondered at that our treatment is not very successful as regards them. The state of the skin, as to warmth and cleanliness, must be attended to, and also diet; and I need not add, that the subjects are badly clad and badly fed, and they are little disposed to take medicine, or persist in its use; nay more, that their parents are often perfectly listless as regards the directions given them, or even the presence of their ailment. The case of the little boy, to which I have so often alluded, is a proof of this. He has laboured under his urinary symptoms for about twelve months, and it was only within the last week that the mother applied for medical advice.

I shall not enter into the details of the therapeutics suited for these cases. I have found buchu and uva ursi, with lime or magnesia water, or with the nitric or hydrochloric acids, in suitable doses, of great benefit; and I have combined them with hyoscyamus. In the chronic cystitic affection,—for I believe it often to be of that nature,—cod-liver oil, alternated with those preparations of iron fitted for children, do much good; and mild counter-irritation in the supra-pubic and lumbar regions with the tincture of iodine, will materially assist their action. Sea air, and tepid or cold bathing, as may be suited to each patient, are most valuable in many cases.

In addition to these general and local means, it is indispensable to attend to the state of the bladder. Its capability of discharging its contents must be tested occasionally, and such operation must be performed very gently, and with a gum-elastic catheter. I am under the impression that in all painful urinary affections children do not empty their bladders fully, and the very position which they select for the purpose shows that they circumscribe as much as possible the action of the

abdominal muscles, so as to measure with more precision the amount of contraction of bladder suited to alleviate their sufferings. In the posture they select they absolutely prevent much pressure of these muscles on the parietes of their bladders, in them so liable from its position to be so affected thereby; and, therefore, in calculus, and in the disease under consideration, there is not a diminution of capacity to the extent to be expected from the repeated action of the bladder. In such cases I have often tested the bladder as to its contents after the child had made every effort to empty it, and in it I have always detected from four to six ounces of urine: even without the introduction of a catheter I have found that percussion in the suprapubic region will enable the surgeon to estimate the amount of distention. I am particular in alluding to this practical fact, as a knowledge of it is important in treatment. It is being carried into effect in the case so often alluded to, where, notwithstanding the great irritability of the bladder, the catheter must be had recourse to, to empty it.

In other instances of irritable bladder, notwithstanding all the curative precautions adopted, and attention to the character of the secreted fluid, the symptoms of the disease advance, the bladder becomes seriously engaged, and even retention of urine may supervene; and all this from a local cause which the inspection of the surgeon could at once detect, and which, strange to say, often escapes the notice of the daily attendants on the child. I allude to some abnormal defect in the genital organs in the immediate vicinity of the urethra, in the labia, or nymphæ, or prepuce of the clitoris in the girl; in the prepuce or orifice of the urethra in the boy. That this is no exaggerated statement the following cases will testify, and, doubtless, similar have occurred, or will be seen by other surgeons if they are on the watch. I shall select cases occurring in both sexes. The first is one of congenital adhesion of the labia pudendi in a child aged two years and some months, and accompanied by a peculiar state of the orifice of the urethra. This child was in progress of recovery from anasarca after scarlatina, and was observed by her mother, some days before my visit, to have repeated, painful, and urgent calls to pass water, which was discharged with considerable and forcing efforts, and the paroxysms were attended with violent screeching. She was also observed repeatedly to apply her hand to the pudenda. The urine gradually assumed a deeply-coloured brownish and sooty hue, and deposited, on settling, that cloudy deposit so characteristic of the albuminous nephritis attendant on the exanthemata. The quantity of urine, which, at the commencement of

the symptoms of anasarca, had materially diminished, and, as is often the case, was accompanied by irritability of the bladder for the last fortnight, was under treatment remarkably increased; but until the within mentioned period there had not been any uneasiness in micturition.

The night previous to my visit, irritability of the bladder had supervened, and was excessive; the cries and suffering of the child were most acute, and considerable hematuria was present. I had been frequently in attendance on the child for the ordinary ailments of children during dentition, and had not on any occasion observed any indication of urinary distress. The almost sudden supervention of the above symptoms, their decidedly local character, and their extreme severity, led me to suspect the presence of calculus in the bladder or in the urethra, with the view to the ascertainment of which I proceeded, when, to my surprise, I found the labia adherent from before backwards, with the exception of two openings through which little more than the point of a probe could be introduced; one of them existed at the forepart, behind the clitoris, and the other posteriorly, in the site of the fourchette. The intermediate junction was very consistent in front, without the presence of any raphè, and, as it approached the perineum, resolved itself into a membranous line almost transparent.

During my examination a vesical paroxysm came on, when I had an opportunity of witnessing the mode of the passage of the urine, almost *guttatim* through the openings alluded to, with a marked protrusion of the intermediate band. The difficulty of the case was now solved; the band was divided; but the orifice of the urethra could not be seen, and every effort to get assistance from the child failed; she would not pass water, and the hemorrhage obscuring the opening of the vagina, further interference was then dispensed with.

The symptoms of irritable bladder subsided, when, on the eighth day, a disposition to their return manifested themselves. Now, on more minute examination, a small cribriform veil of mucous membrane was detected, cloaking the orifice of the urethra, and continued over it from the prepuce of the clitoris. This was divided, and all symptoms of irritation rapidly subsided.

There are many interesting features in this case, but it is sufficiently demonstrative of the object in view at present. The sufferings of the child would not have been alleviated by other means than by those adopted, and, no doubt, to say the least, the irritability of the bladder would have been persistent, and have necessarily led to further mischief. I mean

not to assert that these congenital adhesions of the labia always produce the above symptoms. I know the contrary to be the fact, both here and when they are accidentally adventitious, and particularly if the orifice of the urethra is free; but the recollection of the possible involving of the latter, in either lesion, will put the surgeon on his guard where symptoms such as those I have described are persistent, and do not yield to ordinary treatment. I have divided these membranous septa traversing the nymphæ, and the amount of vesical irritation was hardly appreciable. However, when we reflect on the cases which present themselves, and those not very few, in adult life, of irritable bladder, ostensibly traceable to warty or other growths at or in the vicinity of the urethra and orifice of the vagina, it may not, perhaps, lessen the importance attached to this subject, as demanding early interference; and this especially when from any cause the quantity or the quality of the urine should undergo any morbid change, and hence be productive of more or less irritation.

I must now pass on to the case of boys. Where local circumstances exist, to which are distinctly referrible the symptoms I have above enumerated as attendant on irritable bladder, the value of the remark of Sir Benjamin Brodie is particularly striking, namely, "to combine with the observation of symptoms the study of morbid anatomy" (we may here substitute "abnormal anatomy"), otherwise we are apt to confound with one another affections which are essentially different, under the general appellation of irritable bladder, and torture our patient with remedies worse than useless. I put completely out of the question, for the present, any derangement in the healthy character of the urinary secretion. I will assume that the surgeon is acquainted with it, and that he has adopted the requisite remedial agents; but he is yet unsuccessful; the irritability continues, and if any change has taken place, all symptoms are aggravated, and this although the urine may be restored to its normal state. Whence the cause of this? Let the surgeon examine the penis, and he will frequently get a clue; let him place the child before him, and make him pass water, and let him cast his eye on the appearance of the penis, both before and during the passage of the urine. In not a few of such cases he will find that the orifice of the prepuce is at a considerable distance from the extreme end of the glans; that that orifice is so small as to admit with difficulty the end of an ordinary probe, and that when the child makes water, the urine does not escape in a uniform stream; that it is scattered, and that during its transit the prepuce is distended into a pouch by

the accumulation of the urine within it, the glans being at a considerable distance behind. Cases of this kind are really so frequent, that I do not deem it necessary to specify them; and I venture to state, that if attention is directed to the fact, its practical importance will be admitted. Such a state of organ will not necessarily entail symptoms of irritable bladder. The contrary, as in the case of the female child already noted, may be the fact, but I do affirm, that where deranged action or function of the urinary system arises, no matter from what cause, that the presence of it will be found to be often attributable to the lesion. I mentioned that no *permanent* cure will or can be affected, if it is overlooked; nay more, on a careful revision of the cases which came under my observation, I am disposed to go farther, and to state, that on the supervention of disease, a more aggravated character is traceable to it. Who will deny that cystitis and its uncertain consequences may not arise from it; that stricture may not arise from it; that retention of urine, and that calculus, may not be superinduced by it? Cases illustrative of this will appear in the sequel.

As regards the treatment of such cases, the division of the prepuce may be ultimately required; but from the results of such operation in children, trifling as it is, I am disposed to prefer mechanical dilatation of the orifice of the prepuce by the occasional insertion of a piece of prepared sponge within it for an hour or so, or by the withdrawal of the prepuce on the glans during micturition. Much success has attended this expedient.

One of the most distressing cases I have witnessed of irritable bladder, arising from these abnormal defects, was where an excoriation took place at the orifice of the urethra, in that deformity termed hypospadias. The mother was actually ignorant of the condition of the organ present; ulceration had supervened, and the subsequent cicatrization had so completely closed the orifice that it would admit only the finest probe. The severe distress present was removed by a slight division of the delicate membrane surrounding the orifice, and the securing of its permanent patency by a piece of bougie.

This portion of my subject has extended so far, that I must for the present postpone the consideration of Incontinence and Retention of Urine in the Child.

Art. V.—*On Difficulties in Diagnosis, with illustrative Cases.* By A. G. Malcolm, M. D., Physician to the General Hospital, Belfast[a].

For the reader of my former paper on the above subject published in this Journal[b], it will be unnecessary to refer again to the reasons which induced me to call the attention of the profession to the importance of recording cases of diagnostic interest. Suffice it to say, that I do so now, with the same views and certainly a stronger conviction of their ultimate value,—more especially to the junior practitioner. As the accurate chart of the navigator enables him to reach the most distant shore, and to pass through the most difficult seas with unerring exactitude, so may the contemplation of an extended series of fully recorded examples of difficult cases in medicine, with their faithful interpretation, form the best foundation to conduct to the safest and most satisfactory practice.

I do, indeed, believe that the right interpretation of the living phenomena of disease is, as a systematic subject of medical inquiry, a field which requires a more searching exploration than has been already made. The really valuable information necessary to assist us in cases of obscurity may exist, buried amongst the vast accumulations of recorded experience, which, however, from being on the moment inaccessible, must be considered for the most part nugatory. It frequently happens that an apparently insignificant symptom for instance, when overlooked or faultily interpreted, becomes the means of serious practical injury. More frequently, an unusual sequence of phenomena, or a marked preponderance of a deranged function, occurring in the course of a case, may so alter original, and, it may be, correct impressions, that a confused or uncertain treatment becomes the practical result. The only mode of arresting this prominent and much to be regretted evil, must, it strikes me, be the more extended diffusion of the practical hints to which I have already referred,—hints, the knowledge of which is, unfortunately, it is to be feared, confined to men of erudition and of protracted and enlarged experience. I can scarcely conceive any greater boon to the novice about to embark on the troubled sea of professional life: for, however profound may be his scholastic acquirements, or however varied his merely systematic knowledge, he will soon feel, and keenly too, the want of that practical experience which time

[a] Read before the Belfast Medical Society. [b] Vol. xii. p. 30.

alone is supposed to be capable of bestowing. Doubtless the progressive improvements in physical diagnosis, which the present age seems destined to mature, have placed in our hands a large compensating power more than sufficient to cope with all former observation; still they must ever have a limited range in actual practice, and difficulties must ever meet the most accomplished diagnostician who relies chiefly on his powers of physical examination. Compared with our ancestors, though we may boast of our scientific progress, it is more than questionable whether we yet equal them in the study of symptomatological inquiry, or in the natural history of disease. Their writings continue as models of faithful observation, and as such can never be superseded.

The illustrations of difficulties in diagnosis, and their effects in remedial management, which I shall now adduce, will, I believe, fully bear out the tenor of these observations. They will exemplify the practical facts,—of the inefficiency of mere physical examination to elicit early the nature of certain cases, the discordance of symptoms calculated to suggest different forms of disease,—latency of important lesions from absence of the usual symptoms,—errors arising from a wrong interpretation of excepted phenomena,—and errors from over-valuing the importance of marked and prevailing symptoms.

The first case may be conveniently reviewed at two different periods, viz., from January until December, 1849; and from January until August, 1850. In the former, the disease was not physically decisive; but its existence, from experience of the latter, could not be problematical.

Case I.—*Slight Bronchitis; Persistent Diarrhœa, followed by a period of comparative health; Relapse of Bronchitis, with physical signs of Tubercle; Hemorrhoids; Laryngeal Affection; Diarrhœa; Death.*

Mr. P. S., aged 18, a clerk in a merchant's office, was first seen by me on January 1, 1849. His appearance was that of a fine, stout, muscular young man, with dark hair and eyes, a clear skin, and florid complexion. He complained of slight cough, which had existed for a short time, came on gradually, and was ascribed to cold. It was attended with some yellow, mucous expectoration, and lateral soreness. A careful examition disclosed, as the only thing abnormal, a slightly-increased intensity of the voice-sound under the right clavicle, and a subdued respiratory murmur under the left; indications which, with bronchitis present, were deemed of little import. In the course of a few days diarrhœa set in, which was attended with

some nausea and anorexia, and nocturnal perspirations. Under the usual treatment all the symptoms disappeared by the middle of April; from which time the patient enjoyed comparative health until Christmas of the same year.

During the first period Mr. S. continued to attend, as usual, to business. He did not lose flesh; and the illness so little affected his general condition, that, in the absence of direct indications, the existence of tuberculosis, though on one occasion suspected, seemed scarcely probable; and this view was still further corroborated by the fact of his apparent recovery for several months.

In December the cough returned; but, so slightly was his general health disturbed, that it was not until the month of April he revisited me. I now observed a marked change. His countenance was pale, and the expression anxious; his appetite and strength were greatly impaired; the cough severe, and attended with occasional vomiting and copious muco-purulent expectoration. Stethoscopic examination under the right clavicle gave a harsh inspiratory, and the same, but very prolonged, expiratory murmur. The percussion-note was also dull, but not comparatively so. The symptoms of phthisis now steadily increased. In June he was confined to bed with diarrhœa and hemorrhoids; pallor and emaciation became more marked. He vomited his food, and the voice became nearly inaudible. Ere the end of the month the dull note of the right apex became decided, and a cavernous *râle* displaced the harsh respiratory murmur. On the 1st of August he died.

The examination in April proved, beyond all question, the existence of a mass of tubercle in the right lung. The time had passed for treatment likely to avail. In less than three months the final stage was reached.

Now a question arises in the mind,—could the tuberculosis have been arrested in either period? We know that a certain recovery may occur in any stage of the disease. We have abundant proof in the writings of pathologists, and in our museums, that cicatrization of tubercular cavities may be effected; and that, in other instances, a calcareous deposit may take the place of pulmonary tubercles. But these results are so exceedingly rare, that, for all practical purposes, in advanced cases, they may be left out of the question. Not so, however, with regard to the earlier stages, where it appears, in a large proportion of cases, arrest may rationally be expected[a].

[a] In the First Medical Report of the Brompton Hospital, London, it appears that, in about 40 per cent. of the in-patients in the first stage of pulmonary consumption,

But was tubercle present in the first period? There certainly was no physical evidence; nevertheless the slight persistent bronchitis and diarrhœa, in my mind, sufficiently establish the affirmative. I agree with Ancell that it is of more importance, in reference to the general disease, to determine, not "whether a local tuberculous development exists, but rather, whether the patient is truly affected with the blood disease, and thereby threatened with its local manifestation. The successful treatment of the disease of the blood in this stage, based on a knowledge of its nature and causes, is in many instances certain. The successful treatment of the disease after it has localized itself is frequently impossible." This prior condition it will not, perhaps, be always possible to discover; and yet, in the present state of physical diagnosis, it supplies the only clue to an early, and therefore effective, management.

How long the state of tuberculosis may exist in an appreciable form, before dynamic indications of its presence appear, is a point, I believe, as yet undecided. My second case will distinctly show that eighteen months at least may elapse under the conditions referred to.

Case II.—*Bronchitis; Hemoptysis; Tubercle locally manifested; Diarrhœa; Death.*

Mr. Y., a captain in the merchant service, called on me, for the first time, 28th June, 1849. He was aged 28, of slender build, fair, and of clear complexion. He stated that he had taken ill about fourteen months previously, with cough and expectoration; which continued since with but little abatement. In April, 1849, he spat blood for the first time. On examination, I found his pulse about 100; but no physical signs indicative of tubercular deposit; and, though repeatedly examined, it was not until August 15th, that the least physical evidence was afforded. During the next eight months he appeared to have improved. The cough, however, continued, and debility was a constant symptom. In April, 1850, diarrhœa, with frequent hemoptysis, became additional symptoms; and, on the 14th of May, a cavity in the left apex was distinctly marked. Hectic now wore him daily, and he breathed his last in the latter end of June.

This is a good instance of extreme protraction of the disease; and especially the prolonged latency of the tubercular development. For the period of a whole year, the only appa-

much relief is obtained; and in 12 per cent. of the males, and 7 per cent. of the females, its progress seems to have been arrested for the time at least, if not completely.

rent condition was that of slight but continued bronchitis; and the suspicion of tubercle, as the cause, did not receive confirmation until the month following, when hemoptysis appeared. The lesson, then, which I wish to suggest from a consideration of these two cases is, that more attention is imperatively called to the early indications of the blood disease—tuberculosis, than of the deposit of tubercle.

My third case will be considered under three different aspects in successive periods, viz., the time prior to admission into hospital, the first month after admission, and the subsequent period.

Case III.—*Pelvic Tumour, occupying the left Iliac Region, rapidly attaining enormous magnitude, with vast Enlargement of left Thigh and Leg; Death; Autopsy.*

Eliza M'C., aged 50, married, was admitted into the Belfast General Hospital, February 11, 1851. Though of a spare figure, she had always enjoyed good health until about nine weeks previously; and her countenance was certainly not indicative of any constitutional disease. The certificate of admission stated that she was suffering from rheumatism of the left hip. On the usual inquiry, she mentioned that she had taken ill with pain in this region, which also extended along the anterior aspect of the thigh, was not relieved by a change of position, and yet was not increased by moderate exercise. Her pulse was 96, full and soft; the tongue furred, and white all over; the appetite was of late impaired; and frequent insomnia was induced by the severity of the suffering. On examination I detected a swollen and tender part, situated in the left iliac region. The tumour was indistinct; yet, from the tenderness, increase of temperature, and some degree of fulness, the fact of its existence was sufficiently made out.

A difficulty now arose as to the nature of this tumour. It presented all the appearances of an inflammatory swelling likely to end in suppuration; and this view seemed confirmed by the absence of any indications of a chronic blood disease.

Leeches were, therefore, applied, with the effect of relieving the tenderness. Nevertheless its size steadily increased, so that, on the 6th of May, the circumference of the abdomen, including the tumour, measured thirty-four inches. In this interval the patient became perceptibly emaciated, while the left thigh and leg gradually enlarged. At this time the tumour was dense, tender, and deeply fluctuating; and much pain and difficulty were felt in moving the limb. Soon a marked change occurred, both in the general and local condition. The pulse rose; the emaciation rapidly progressed; she became at times delirious,

and her memory defective. The most elevated part of the tumour assumed a purplish appearance, and the pain was constant, and occasionally agonizing. The contrast presented by the appearance of the two limbs was striking in the extreme, the circumference of the left thigh, at its upper third, being fully thirty-two inches, or about three times that of its opposite. The left ilium also greatly increased; and it was evident, on examination at this date, that the osseous structure was involved. Complete prostration now ensued, and she expired early in the following month. Before death an excellent cast of the tumour was taken *in situ*, which is deposited in the Pathological Museum. A careful examination of the diseased structure was made shortly afterwards, when it was found that the entire cancelli of the ilium were hypertrophied to an enormous extent, and charged with soft gelatiniform cancer.

It is more than probable that, for some weeks after the commencement of the disease, there was no evidence of the existence of a tumour. It is not very wonderful, therefore, that the neuralgia was ascribed to local rheumatism, which the case was supposed to be by the practitioner whom she first consulted. Then, when the tumour did make its appearance, the difficulty was not much diminished, for there was no symptom at all indicative of the real disease. On the contrary, the febrile symptoms, and the result of local examination, seemed to place the inflammatory character of the case beyond all doubt. The progress, however, soon disclosed its real nature; for, whenever the rapid enlargement of the tumour, and the gradual breaking up of the constitution were simultaneously observed, its malignancy was at once established. It is just possible that, had greater attention been paid to the circumstances of age, the gradual formation of the tumour, its position, and the absence of any ordinary cause, its serious character might have been earlier suspected. On the whole, the case is a remarkable instance of the close simulation which carcinomatous disease, in its formation, may bear to ordinary acute inflammation.

The next case is an example of the utmost pathological complexity. Several lesions were indeed latent throughout, and others, to which the attention was strongly directed during life, were found to be small in comparison with the expectations formed.

Case IV.—*Lumbar Abscess; Ascites; Dysentery; Hypertrophy of Liver; Tubercles; Extensive Pleuritis and Emphysema; Subacute Peritonitis; Erysipelas of Face; Death; Autopsy.*

John M'K., aged 25, a wood-turner, was admitted into the General Hospital, April 29, 1851. His appearance at once in-

dicated a scrofulous constitution. His illness was of twenty-one months' duration; but, during the first twelve months of this period, his general health was little affected, and he only complained occasionally of pain in the lumbar and right iliac regions. This pain then became fixed and constant, and in about three weeks an abscess formed, and discharged externally at a point in the loins two inches from the spinal column. A sinus remained, and has since continued open. The chest symptoms appeared about three months before admission, and were ascribed to cold. Troublesome cough, with offensive muco-purulent expectoration, has ever since continued. On admission he presented a very miserable appearance, being extremely emaciated and debilitated. Appetite and sleep had almost left him. On examination of the chest, there was slight dulness of the left apex, where the inspiratory murmur was bronchial, and the expiratory sound crepitant. Mucous and bronchial *râles* were heard at the upper part of the right lung. His abdomen was tympanitic, but not tender. (A more satisfactory examination was rendered impossible in consequence of his extreme debility.) Shortly afterwards, dysenteric symptoms set in, and the feet and ankles became œdematous. A second examination of the lungs at this time presented slight bronchophony, a harsh and tubular inspiratory, and prolonged expiratory, murmur at the right apex. The dulness formerly mentioned was not now observed. A few days subsequently he was attacked with erysipelas in the face, under which he rapidly sank (June 11th). The post-mortem examination revealed old pleuritic adhesions in both sides of the chest. A few small masses of grey and gristly tubercle were observed, especially at the apex, in the left lung only. The bronchial divisions of both lungs were filled with whitish serosity; and emphysema was noticed on the loose borders. The heart was atrophied, without other change. The liver was of a fawn-colour, very dense, and greatly hypertrophied. The peritoneum was here and there injected, and loose flocculi of imperfect lymph, with a few adhesions, and two quarts of straw-coloured serous effusion, occupied its interior. The intestines were unusually distended; the muscular and mucous coats thin and bloodless; the mesenteric glands were enlarged and hardened, but not tubercular; and, after the most careful search, no communication could be detected between the lumbar fistula and the peritoneal sac.

So far as could be learned by a careful examination of this case on admission, the principal diseases present appeared to be the old sinus in the loins, and the thoracic disorder. The

habit of body, the extreme emaciation, and, to a certain extent, the physical signs, all combined to lead the mind to tubercular disease; and the idea was rather confirmed by the supervention of the dysenteric symptoms. The second examination of the chest, however, after a month's interval, tended to disturb the first impression, as we find no progress in the supposed tubercular lesion, and as the co-existence of bronchitis with emphysema would explain the signs equally well. The tympanitic state of the abdomen prevented any reliable examination of the liver, the disease of which, had not the œdema of the ankles been ascribed to debility, might have been thereby indicated, while the existence of fluid was altogether uncertain. The autopsy, however, satisfactorily clears up the case. The old pleuritic adhesion, though doubtless the cause of the limited bronchophony, it was impossible to detect in the absence of historical symptoms of the disease. The enlarged liver having compressed the air-cells of the right lung, it is easy to account for the tubular respiration heard in that lung; while the emphysema will readily account for the prolonged expiratory murmur; and the bronchitis in association will at once interpret the remaining thoracic indications. It does not appear that the few gristly tubercles could have produced any serious symptoms.

It is difficult to account for the existence of peritonitis, which was plainly observed at the autopsy; had there been communication with the lumbar sinus, the explanation would be at once apparent. It is, however, not uncommon to meet with a form of sub-peritonitis in connexion with hypertrophy of the liver, which seems to be caused by the retardation in the portal circulation.

The case which I shall now adduce is an interesting instance of difficulty in thoracic diagnosis, and may be viewed under three aspects: one, from the present condition and past history; a second, from the additional testimony of the physical examination; and the third, from the effects of treatment.

Case V.—*Protracted dry Cough; Axillary Abscess, and subsequent Sinus; Pleuritis, effusive in the left Side, congestive in the right; Tubercle doubtful* (?).

Isabella J., a mill-girl, aged 17, was admitted into the General Hospital, 16th November, 1852. She was of slender conformation, and of a florid and clear complexion. She stated that she had been ill with slight cough for twelve months, and that for the last month it had considerably increased, and was

attended with dyspnœa, aggravated by attempting to lie on the right side. An axillary abscess, for which she knew no cause, formed last April; this temporarily healed, but soon after became fistulous, and has continued to discharge. She never complained of pain in the left side; never spat blood; and the cough was always dry. There were no unusual perspirations; and the bowels were always regular. The menses, however, have been variable in frequency and amount; and the appetite and health of late impaired. Within the last few days she has complained of sharp pains in the right side, which have impeded respiration.

The disease, which a reflection upon the case will so far present, would be latent phthisis, or pleuritic effusion, with recent pleurisy in the right side. The history and appearance would strongly induce the observer to look for tubercle; while the dyspnœa, the decubitus, and the dry cough, would, on the other hand, indicate pleuritic effusion. The balance seemed equal. We shall now see what further light the physical examination shed upon the case.

The thorax was of ordinary formation, but the intercostal movements on the left side were more limited than those on the opposite; the former measured half an inch in excess. Vocal vibration was absent; and over the entire lung, including the apex, the percussion-note was distinctly dull. Under the clavicle, the expiratory murmur was prolonged. Posteriorly, at every point, there was bronchial respiration, with bronchophony. At the angle of the scapula, on the right side, *frottement* was distinctly heard, and puerile respiration at all other points. On examination of the heart, the sounds were normal, but heard best at the inferior sternal region, where also the impulse was felt.

Now here, notwithstanding that pleuritic effusion was indicated by the extreme dull percussion-note, and the displacement of the heart, yet there were still arguments against this supposition. Whence the extension and uniform dulness, including the very apex? Whence the general prevalence of the bronchial respiratory murmur? Why, in a case of so great effusion, sufficient, it seems, to have dislocated the heart, had we not complete absence of the respiratory sounds, at least at the base? Do we not find, that when the bronchial respiration occurs in pleuritic effusion, it is limited to the inter-scapular or superior anterior regions? and that, under such circumstances, the fluid gravitates to the base, and compresses the superior lobes against the parietes, where a comparatively clear sound, on percussion, should exist? But here, on the con-

trary, we had *marked* dulness at the very highest point, and bronchial respiration at the very base. Then, again, some of our best stethoscopic authorities argue that the existence of the bronchial respiratory murmur is the exception, and that its presence must depend upon at least co-existent consolidation. Thus Barth and Roger:—"For ourselves we should say, that bronchial respiration can be heard in pleurisy, but that, for the most part, it is *not* heard. The tubular blowing is an exception to this disease, and an exception, moreover, so rare that, when it is heard, something else than a *simple* pleurisy should be suspected"[a]. Again, "the pathognomomic sign of pleurisy with effusion is the silence of the respiratory murmur, and *not* the presence of the bronchial respiration. And if it be perceived elsewhere than in the neighbourhood of the roots of the air-tubes, the pleurisy is not simple, but is complicated with pulmonary induration." Fournet states as his opinion, that the bronchial character can only be heard at the very commencement, or in very limited effusion, but disappears when it becomes copious[b]; and indeed all agree, that bronchial respiration is a phenomenon almost always limited to the sites of the larger bronchial divisions. Looking at the case with this idea prominent, and observing the uniform dulness of the lung, it seemed impossible to ascribe the signs solely to pleuritic effusion. What then was the other supposition? Chronic pneumonia, or tubercles, or it might be that peculiar condition named cirrhosis. The history told against the idea of pneumonia, as not a single symptom could be adduced to suggest its existence. Tubercle it might be, but not simple, as then we should have observed signs of an advanced stage at the apex, had infiltration been sufficiently general in the lower lobe to cause obliteration or compression of the air-cells. This idea also would not explain the enlargement of the side, and the displacement of the heart, and it would be quite exceptional to find a total absence of expectoration for the long period of twelve months, had such extensive infiltration occurred. Any view taken was surrounded with difficulties, and it was determined to act cautiously at first, on the idea of simple inflammatory effusion, and patiently await the result.

Accordingly, an ointment composed of the mercurial ointment and that of the hydriodate of potash was ordered; the side to be well rubbed with it night and morning.

After the lapse of ten days, a careful examination of the chest was again instituted, and this time with important results.

[a] Newbigging's Translation, pp. 64, 65. [b] Brady's Translation, p. 177.

Over every part of the left lung the percussion-note was very much clearer, especially at the upper part and anteriorly; and at all points, even as high as the clavicle, was a distinct friction sound heard. The heart had nearly assumed its natural position, and the patient could lie equally well on either side. The dyspnœa and cough were also greatly relieved, and, in every respect, she progressed most favourably. This amendment steadily increased; and in the course of another ten days she left the hospital almost well, there being but very slight dulness remaining at the base of the left lung, and the respiratory murmur having returned. I must observe, however, that the prolonged expiratory murmur, heard originally at the apex, was present when she left, and accompanied by a slight comparative diminution of resonance under the left clavicle.

Here, then, we find that simple pleuritic effusion, even to such a large extent as to augment the circumference of the side more than half an inch, and to displace the heart, may yet only compress the lung so as to admit of a general bronchial respiration being heard, and not so much as to obliterate all sound. It is plain that this fluid must have enveloped the lung pretty equally all round, else would the lung have floated, and the superior parts sounded clear on percussion? There must also have been some adhesions near, or at the base, to have prevented the floating of the lung, and permitted the fluid to assume the form of an envelope.

This rare form is adverted to by Walshe in his recent work. Thus, he says, "if there be adhesion, or agglutination of the pleura, respiration of the diffused blowing type (often sufficiently marked to suggest the idea of hepatization) is more or less extensively audible; the presence of condensed lung near the surface sufficiently explains its existence. But it is not alone in these cases of adhesion that blowing respiration may attend pleuritic effusion; it may be present when no adhesion exists and the effusion is abundant." He further adds, however, that in these cases it is for the most part very slight, deep-seated, and generally limited to the middle height of the back.

Hughes remarks upon this peculiarity as a most curious exception, and one most difficult of explanation, and refers to one case where not only was tubular breathing general, but a shrill resonance of the voice was distinctly audible over the whole side: the very phenomenon which occurred in the case under consideration. And Williams has, in consequence of hearing tubular respiration so very marked and tracheal, at the upper region of the affected side, been more than once deceived into the belief that there were caverns underneath.

This case, I think, sufficiently exhibits the importance of weighing well all the possibilities, *pro* and *con*, before explaining the physical signs according to the more usual interpretation. The physical signs are there; nature cannot err, and it is hence our duty, by careful examination and a knowledge of all possible contingencies, to read her lessons aright. I need scarcely add, of how much value a true diagnosis in such cases as this is calculated to be to the practitioner, in a therapeutic aspect. Let us gain a correct knowledge of any disease and its *nature*, and we are in the fair way of contending against it with success; otherwise all is darkness and blind uncertainty. But more especially are these remarks of import when a diagnosis has to be made between a case of inflammation and one of tubercle, lesions whose proper management is so much at variance.

In my next case the principal disease was for a considerable time only suspected, and the secondary affection overlooked altogether, in consequece of the absence of the usual symptoms and their general want of harmony. I shall consider it at two different periods.

Case VI.—*Chronic Dyspepsia; Vomiting a principal Symptom; Progressive Emaciation; Distinct Remission; Relapse, with Peritoneal Effusion; Death; Autopsy.*

A medical practitioner, aged about 56, resident all his life in a country district in the neighbourhood of B———, consulted an eminent physician in November, 1851. The habits of the patient were extremely active and temperate. He was always accustomed to uncommon exertion in his daily practice, and yet found time to take a prominent part in promoting the interests of scientific societies not immediately connected with his profession. His health was generally excellent throughout a long career of practice. In the autumn of 1851, however, his friends noticed an unfavourable change in his appearance. He became older looking than what his years would indicate, and he had, from consciousness of infirmity creeping on, considerably curtailed the range of his practice. It was not until early in November, that the *malaise* assumed a distinctive form. The symptoms were now prominently gastric; vomiting of food at varying intervals, but generally a considerable time after ingestion, with debility and constipated bowels, were amongst the principal.

I first had an opportunity of seeing him on the 19th. He stated that he had been then six weeks ill. During this time he had become considerably emaciated, yet his pulse was perfectly

quiet, never higher than 68 or 70; his tongue clean; and he complained of no pain, even on pressure, over the epigastric region. For about one month the symptoms improved but little, yet afterwards he began perceptibly to amend. The vomiting became only occasional, the emaciation ceased, and his general appearance and strength became much improved. From February until May his health was so far restored, that he was able to resume a portion of his usual avocations to a certain extent, and we had great hopes that he would eventually recover.

The impression during this interval entertained of the nature of the case vibrated between the idea of functional derangement and organic change. The returning health, together with the appearance, during the period of improvement, of small dark scybalæ in the evacuations, certainly favoured the former, while the absence of all pain or tumour, and the complete remission of the symptoms, seemed to put out of the question all idea of the latter.

In May, however, the symptoms supervened. The brief respite from suffering only ushered in a more marked change. He began now to complain, for the first time, of distention and uneasiness of the abdomen. The appetite declined, the strength again gave way, and the gastric irritability returned, but never to the same extent as formerly. The evacuations were scanty and difficult, and the tongue now first assumed the aspect of constitutional irritation. Yet the pulse, strange to say, remained at the usual low figure of health. Towards the latter end of this month, however, it rose a very few beats, and the other symptoms decidedly increased, with the addition of an uneasy sensation in the rectum—which annoyed him especially during and after each evacuation, some œdema of the ankles, and a slight bronchial affection which now set in. The rectum was carefully examined; and it was only now that we had a full idea of the extent of emaciation and prostration which had gradually ensued. We observed a fringe of old piles at the anal margin, and within, the prostate was felt enlarged, hard, and protruding into the bowel. He so perceptibly felt the change in this organ, that he was strongly impressed with the idea of a tumour. It gave him, however, no pain, and its apparent magnitude was in a great measure due to the deficiency of adipose substance in the vicinity of the rectum, which permitted a certain degree of falling, or prolapse of the prostate into the gut. From this time he sank rapidly, and on June 4th expired without a struggle, or indeed any change of symptoms.

The original idea of cancer received much corroboration

during this period; but the source of the abdominal uneasiness was not clearly divined. At one time—and it is not a little distinctive of the soundness of his judgment—he had himself the impression of inflammation; but this idea seemed scarcely tenable, when it was considered that not only could he bear pressure over the abdomen with impunity, but that he actually had it firmly swathed with a roller, which gave him positive comfort. Besides, the pulse never exceeded 75 beats in the minute, prior to the moribund period at the close. Nevertheless he could not divest himself of the idea he had formed of peritoneal inflammation; and, as the examination proved, his fears were indeed too true.

An autopsy was held on the third day after death. The body was extremely emaciated; the abdomen was greatly distended, with intestinal gaseous accumulation, and upwards of two gallons of a bloody fluid in the peritoneal cavity. The surface of the peritoneum was greasy, and shreds of imperfect lymph were abundantly scattered over it, but without any adhesions. The stomach was greatly contracted. It certainly could not have held more than six ounces of fluid; but the walls were thickened by carcinomatous deposit to at least three-eighths of an inch, especially at the pyloric extremity. Its mucous surface was dark grey, but otherwise normal. A section of the coats presented the same appearance as is so accurately and beautifully delineated in Cruveilhier's plates[a]. The whole tract of the intestine presented nothing unusual, nor did the mesenteric glands. The kidneys were atrophied; dark, soft, but not diseased. The prostate was simply hypertrophied; the bladder, and, with the exception of the external piles, the rectum, presented a natural appearance. The other abdominal organs were likewise healthy.

The thorax was also examined. Some tinged fluid occupied the pericardial sac, which was otherwise natural. The heart itself was grey and soft, and, on microscopic examination of a section, presented a characteristic example of fatty degeneration—the pulpy yellow transformation, to a considerable extent. The lungs were quite healthy, but the pleura presented some old standing adhesions.

The slightest reflection upon this examination will at once account for the absence of pain in the gastric region; the mucous membrane was intact, the deposit was in the submucous tissue; but the absence of abdominal tenderness cannot be so readily explained. It is, perhaps, to be considered that

[a] Livraison 27, pl. 1.

as the peritoneal affection was completely asthenic, and occurred when the powers of life were fast failing, sensation would be so greatly impaired as to present only the form of uneasiness which the patient certainly complained of; and it will also be recollected, that, in the course of peritoneal disease, it is not uncommon to meet with a complete remission. The case then shows us the diagnostic importance of attending particularly to even apparently trifling indications of inflammatory action, when occurring in the course of a constitutional disease, or in subjects of advanced age, and debilitated vital power.

The last case which I shall at present adduce presents a unique example of the persistence of derangement of an organ which proved to be only sympathetically affected, but which was supposed to be structurally engaged. The impressions formed of the nature of the case, at different periods, were three, viz., first, hepatic disease inducing duodenitis and irritable stomach; second, cancer of the pylorus; and, lastly, disease of the brain.

Case VII.—*Dyspepsia for two years; Hematemesis; Persistent Vomiting and frequent Hiccup, with severe but variable Cephalalgia; Convulsions; Death; Autopsy.*

Mary C., aged 27, was admitted into the Belfast General Hospital, 21st June, 1852. She was extremely emaciated and debilitated; and though on the previous day attacked with delirium and convulsions, was now quite sensible, and complained of intense headach. On her way to the hospital she had vomited. Through the kindness of my talented young friend, Mr. Henry Johnston, I was enabled to ascertain her complete history, which for a considerable time before admission had anxiously engaged his attention. It appears that she had been ailing for a period of two years with anomalous dyspeptic symptoms, during which she had been gradually losing flesh; that ten months previously she had an attack of hematemesis, and again on three or four occasions; and that since, she has frequently complained of headach and vertigo, which were occasionally very severe. The menses had been absent several months, during which the gastric symptoms were greatly aggravated. She vomited food almost regularly, complained of soreness and burning at the epigastrium and left hypochondrium, and frequently of palpitation. Her immediate relatives, when questioned as to the cause, were of opinion that the anxiety of mind induced by a disappointment in marriage had been an essential source of her maladies.

On March 10th, when it appears she first applied to Mr. Johnston, the following was her condition:—Her appearance was pale, and much debilitated; her colour of a light, dusky-yellowish hue; her pulse was small, feeble, and 80. She complained of severe headach; there was neither cough nor expectoration. The tongue was furred at the edges, and along the centre was a brown streak. There was no thirst; but vomiting was very frequent, and about one hour after meals, with soreness of the epigastrium and left hypochondrium, and frequent hiccup. The bowels were regular, and the evacuations various; the urine brown, and charged with lithate deposit. Under the idea that the irritability of the stomach was connected with and dependent upon inflammatory action going on in the duodenum and liver, she was mercurialized, but without any real relief. A slight remission, it is true, occurred towards the end of March, but early in April the symptoms steadily augmented in severity. The vomiting and hiccup became now almost constant; and the attention was strongly directed to the stomach, as being most likely the real seat of the disease. A careful examination was made on April 13th: neither tumour, nor tenderness, nor dulness on percussion, gave the slightest countenance to this impression. Mr. Johnston noticed at this time that the vomiting was always induced by suddenly sitting up, or after changing her position, and was more marked in the mornings. Lime water and milk, which she had been getting from the beginning of the attendance, was the only form of nourishment which was retained.

On May 10th the case assumed so much the appearance of malignant gastric disease, that all idea of any other organ being engaged except the liver, which still seemed probably involved, was lost sight of; and indeed the symptoms were most deceptive. The vomiting was most constant; occasionally blood would appear in the matters ejected; the skin became dry and shrivelled, and emaciation progressed.

Two days previously to admission, the pain of the head became suddenly intense,—a sharp, cutting pain darting from the forehead to the left mastoid process, and attended with constant ringing sounds. This was soon followed by a marked convulsion of the left arm, and partially of the left side of face, with delirium. The following day, however, all this had passed off, and she became sensible as usual, and in this condition she was admitted into the hospital, where she died suddenly, and without apparent struggle, on the evening of the second day. A post-mortem examination revealed what was but little expected,—a *normal* state of the stomach, liver, and all the ab-

dominal and thoracic organs. The brain was very carefully examined, and the only structural alteration observed was the existence of a defined spot of ramollissement in the centre of the right crus of the cerebellum. The softening was very distinct when compared with the symmetrical part. On microscopic examination, also, it presented the exudation granules figured by Bennet.

The records of pathology show us, that sudden cerebral symptoms at the close often prefigure this lesion, though there may be little disorder previously of the nervous functions. This case is, however, remarkable for the circumstance of protracted gastric irritation simulating the best-marked cases of carcinoma, wholly dependent on the cerebral disease, which must have formed exceedingly slowly, and without presenting any impairment of motion, and only temporarily of intelligence at the close, throughout the progress of the case. I cannot discover its parallel, although I have consulted several of our standard pathological works. Abercrombie, indeed, has narrated cases in which ramollissement of very limited extent was found as the only morbid appearance, in connexion with symptoms of long standing; but these symptoms were not, as in the present case, almost wholly gastric. Though, on admission into the hospital, attention was at once directed to the cerebrum, yet previously I question whether any, even the most experienced mind, would have been led to divine the real lesion in the case.

The foregoing illustrations are intended to present a sample of some of the difficulties that beset medical practice. I believe firmly, the more we are acquainted with such, the more we are stimulated to search into and unravel the mazes of the conflicting phenomena of obscure cases, the better practitioners we must become. Scholarship will not stand us in good stead here. Experience can only thus be early acquired. If such an object be in any degree promoted by these contributions, my aim is accomplished.

And I would here most earnestly beseech the seniors of our body to impart even a little of the vast mass of practical hints which time and observation have afforded, in further elucidation of this interesting inquiry, for the common benefit of all. Ours is a noble profession—noble in the noblest sense. It hides nothing for selfish ends which it thinks calculated to advance the interests of our science or art. Let none, then, of those who have already gained amongst their fellows the high reputation of distinguished practitioners, and the golden opinions of the general public, refrain, from any consideration, from imparting

the fruits of their successful experience. I feel convinced that, if our profession is to advance much as a practical study, it can only be by elaborate, but ordinary, intelligent observation *at the bed-side*, going hand in hand with the results of a pure scientific research.

Art. VI.—*On the Medical Evidence of Death from Drowning, in relation to the Case of W. B. Kirwan.* By Alfred S. Taylor, M.D., F.R.S., Lecturer on Medical Jurisprudence at Guy's Hospital, London.

[After the trial and conviction of W. B. Kirwan, at the Commission Court in Dublin, in December last, for the alleged murder of his wife, an appeal was made to me, by several gentlemen of good professional standing in London and Dublin, to state my opinion regarding the validity of the medical evidence against the prisoner. The subjoined paper embodies that opinion. It was not written originally with a view to publication in a medical journal, but to aid in bringing about a revision and a reconsideration of the medical evidence upon which the conviction appears to have taken place. It has been suggested to me that the publication of this short paper, in the Dublin Quarterly Journal of Medical Science, would be attended with some advantage in reference to a very obscure and very difficult branch of medico-legal inquiry; and I have, therefore, assented to its appearance there. In considering the whole case, it seemed to me that, notwithstanding the moral and circumstantial evidence against the accused, the learned judges who presided at the trial considered the medical proof of *violent death* to be absolutely necessary to conviction. The jury, by their verdict, came to the conclusion that the cause of death was violent, and from the hands of another; but the appearances of the body, so far from supporting, rather tended to rebut, this view. Such, at least if I am rightly informed, is the conclusion to be drawn from the medical facts. But for the moral circumstances adduced against the prisoner, it is not possible to suppose that, in the absence of any marks of murderous violence on the body, to bear out the theory of the prosecution,—of any marks of violent struggling or resistance,—and in the absence of any of the special signs of drowning or strangulation on the body of the deceased, this man should have been convicted of murder. A question then arises whether any amount of moral evidence can compensate for a deficiency of proof of the cause of death? From a sentence extracted from the charge of the learned judge,

and placed at the head of the subjoined paper, the answer to this question must, I apprehend, be in the negative. The proof of a violent death is an essential part of the proof of the alleged crime; and in Kirwan's case this proof, medically speaking, is deficient. Had the signs and appearances of the kind of death (drowning and suffocation by pressure) by which the deceased is alleged to have been destroyed, been properly placed before the jury, they must, in my opinion, have been led to entertain a rational doubt whether death in this case was so clearly traced to violence at the hands of another, as to justify a conviction for murder. Different degrees of evidence satisfy different minds; but a medical witness is bound to base his opinion on medical circumstances, and when these are not forthcoming, he cannot be allowed to supply their place by moral circumstances. It may be that some criminals will escape by a strict adherence to this rule, but this is of small importance to society, compared with the punishment of one who is really innocent. Looking at the unsatisfactory nature of the medical evidence of violent death in the case of Kirwan, it would certainly have justified a verdict of Not proven.]

In the charge to the jury by the learned judge who tried this case I find, according to the published reports, the following remark:—

"But if you are unable to satisfy yourselves as to whether this was a VIOLENT DEATH or a NATURAL DEATH, you ought to give the prisoner the benefit of your doubt,—your rational, well-founded doubt,—and to acquit him."

The jury appears to have been satisfied, from the *medical evidence*, that this was *not* a natural but a *violent* death, and to have returned a verdict accordingly.

With deference to the medical witnesses who gave evidence on this occasion respecting the cause of death in the case of Mrs. Kirwan, I beg to submit that the appearances in the body did not justify the inferences drawn,—that these appearances fail to prove that the deceased died a violent death; and that they are quite reconcileable with the view that the deceased died, while in the water, from a sudden attack of apoplexy or epilepsy.

The evidence of Mr. Hamilton, who saw the body on the day following its removal from the water, included the following points:—

1. There were abrasions of small extent about the right temple and eyelids.

2. A white froth, untinged by blood, issued from the mouth.

3. The countenance was rather pale.

4. There was a stream of blood on the cap, which appeared to have come from the ear.

5. There were no wounds or marks of violence about the body[a].

On the 6th of October, *thirty-one days* after death, the body was inspected by Dr. Hatchell. From this examination it appears:—

1. That there were abrasions in the situations indicated by Mr. Hamilton.

2. That there were no marks of violence, of stabs, cuts, or fractures, or of any injury likely to cause death.

3. That the right eye protruded; the upper lip was swollen; the inside of the lip vascular; the tongue protruded and marked by the teeth; the genital organs vascular, and containing more blood than was natural.

4. The brain was of a light pinkish colour, and very fluid, owing to decomposition. The lungs were healthy, but *congested* posteriorly, inferiorly, &c.; this congestion assigned to engorgement of blood during life[b]. The heart was healthy, and was *empty* both at *the right* and the left side, as were also the *large vessels* connected with it.

5. There was nothing to indicate that any weapon had been used.

6. It is to be inferred also, from the foregoing statement of the condition of the body, that there were no marks of a ligature or of violent compression about the mouth, neck, or chest.

7. The stomach was found *empty* and contracted, and there was no *froth or frothy mucus* in the trachea, bronchi, or air passages.

8. The abdomen was much distended with gas, and the diaphragm *much pushed up.*

Taking these statements to represent the condition of the body of the deceased, I would beg to observe, that there is nothing here of a medical nature to *prove* that the deceased died by drowning, or by any form of asphyxia, such as suffocation or strangling.

The most important and well-marked appearances of DROWNING are:—

1. The presence of a frothy mucus and fluid (*tinged with blood*, in cases of great congestion during life) throughout the air-tubes of the lungs.

[a] "A few scratches as if from rocks."—*See Information taken on the 7th September*, 1852.

[b] "The lungs collapsed, and the minute vessels gorged with blood."—*Printed Information, 15th October*, 1852.

2. The presence of water (salt-water if in the sea) in the stomach.

3. Congestion of the lungs, with a full and distended condition of the RIGHT SIDE of the HEART, and of the great blood-vessels connected with it.

The appearances observed by Dr. Hatchell in the body, after it had been buried in a *wet* grave, *thirty-one days after death*, appear to me to reveal no more than the general effects of decomposition, which must, upon his own admission, have advanced to a considerable extent, to have rendered the *brain fluid*, and to have caused a *pushing* up of the diaphragm by the gas in the intestines. Engorgement or infiltration of blood in the small vessels of the posterior and inferior parts of the lungs, as well as of the lips and genital organs, may naturally be expected where decomposition has gone on to this extent; and in my opinion no inference presumptive of death by drowning, or by any form of suffocation, can be safely drawn from the appearances which he saw and has described. Such changes, excepting the abrasions externally, might be found in any dead body buried for a month in a wet grave, and quite irrespective of violent death. In so far as the appearances can be relied on, they actually prove that the only certain signs of death from drowning were wanting:—

1. There was *no froth* or frothy mucus in the trachea.
2. There was *no water* in the stomach.
3. There was *no blood* in the *right cavities* of the heart, or in the great vessels connected with it.

The froth observed by Mr. Hamilton as issuing from the mouth recently after death may have been produced as well by a fit, causing death while a person is in the water, as by actual drowning. This froth was *not tinged with blood*, a fact quite adverse to the theory that there was such congestion in the respiratory organs from great pressure exerted during life as to cause oozing of blood from the ears.

It is true that a person may be drowned without necessarily swallowing water, or struggling so as to produce a frothy mucus in the air passages of the lungs: but then the *medical proofs* of drowning are entirely wanting, and the person may have died from some other cause, and not from drowning. When these well-marked appearances are absent, there is an entire failure of *medical evidence* respecting this species of death. I believe that the only appearance on which Dr. Hatchell relies—engorgement of the vessels at the posterior and inferior parts of the lungs—may have been due to post-mortem changes: it is not of the least value as medical evidence of drowning

unless observed soon after death; and unless attended with other appearances which, upon the assumption of death by drowning, or by some other form of asphyxia, ought always to accompany it.

One of the most striking characters of *asphyxia*, including death from drowning, hanging, strangulation, and suffocation, is a *distention* of the *right cavities* of the heart, and of the large blood-vessels connected with these cavities, *with black fluid blood.* This condition is a necessary result of the engorgement of the vessels of the lungs, when this engorgement is really due to asphyxia; and if, *even in a recent inspection*, we find a distention of the lungs *without a corresponding distention of the right cavities of the heart*, we cannot (unless other circumstances supply affirmative evidence) be assured that the person has really died of asphyxia.

In the examination of the drowned, and of persons who have been strangled, as well as in experiments on animals drowned, strangled, and suffocated, this condition of the heart has been, according to my observation, an invariable accompaniment of engorgement or congestion of the vessels of the lungs. Cases have been met with where the lungs have not been found gorged, and the cavities of the heart empty; but I cannot call to mind a case where the *lungs have been found engorged as a result of asphyxia, and the cavities of the heart empty!* The absence of the distention from one or both organs would in general render it impossible to give, upon medical grounds, an affirmative opinion that death had taken place from asphyxia.

At page 622 of the last edition of my work on Medical Jurisprudence (fourth ed., 1852), I have recorded a case of murder by the forcible immersion of a female in a pond. The mode of death corresponds somewhat to the theory adopted by the prosecution in the case of Kirwan, i.e. the deceased died from the effects of drowning, and by an amount of pressure or violence which mere drowning would not explain. The case occurred to my friend Mr. Image, a surgeon at Bury St. Edmunds, Suffolk. Contrast the medical evidence respecting the cause of death in this and Kirwan's case. Froth and mud were found in the mouth and fauces, also in the air tubes, as well as pieces of green weed from the pond. The stomach contained a pint of liquid, mixed with *mud* and *sand.* The lungs were engorged and greatly distended, *containing much fluid and frothy mucus.* The state of the heart is not described in my published account, but knowing the importance of the observation, I wrote to Mr. Image, to inform me of its condition. In a letter dated Bury St. Edmunds, May 17th, 1852, now lying

before me, he says, "*Both right and left cavities of the heart were filled with black fluid blood.*"

My friend, Dr. F. Ogston, of Aberdeen, has had great experience in the inspections of the bodies of the drowned. When I held the Editorship of the Medical Gazette he sent me a series of papers on this subject, not for the purpose of supporting any particular theory in any particular case, but as a *dry record of medical facts*. In reference to the appearances now under discussion, a paper by him will be found in the Number of that Journal for August 15, 1851[a], in which he gives an account of the condition of the heart in fifty-three inspections which he made of *drowned subjects*. The right cavities were found empty only in *two* instances, and in one of them the person had been fifty-six days dead, and in the other dead for an uncertain time. If any reliance is to be placed upon the examination of the body in the case of Mrs. Kirwan, the appearance presented by the heart destroys the inference drawn from the engorgement of the lungs, and proves, or renders it in the highest degree probable, that this lady did not die from drowning or suffocation.

But it may be said, frothy mucus may have existed in the air-passages at the time of death,—so also the heart may have been distended with blood, and the stomach may have contained water,—that in fact decomposition may have led to the obliteration of these conditions. If this view is to be adopted, then the inference of death from asphyxia (drowning or suffocation) must be based, not on medical facts, not on appearances actually presented by the body, but on a series of assumptions. Such a course would be most dangerous, and when *no mark of violence on the body existed to indicate death from asphyxia*, it would be equal to declaring a man guilty of murder, not upon scientific proofs, or upon data confirmed by experience, but upon mere conjecture.

The theory of death assumed by the prosecution is not only not proved, but actually disproved by the appearances found on the body. Had the dead body of Mrs. Kirwan been found inland, at some distance from the water, her clothes removed, and no appearance of wetting about the body or hair, it appears to me impossible that any medical man in examining the body, and finding only the appearances described by Dr. Hatchell, could have arrived at the conclusion, that death had taken place from forcible drowning, or from asphyxia by compression, as a result of manual violence.

The slight abrasions found on the face, temple, and chest,

[a] Vol. xlviii. p. 290.

with the slight cut on the right breast, might have resulted from the deceased falling on her face, and from her struggles in dying. The bleeding from these parts, including bleeding from the ears, may have arisen from the fact that the body was warm, and the blood was prevented from coagulating by reason of its continual removal by the water. Abrasions about the ears may thus give rise to bleeding in drowned subjects. The bleeding from the ears does not appear to have been very considerable, Mr. Hamilton states, that when he saw the body the day after removal from the water, the whole accumulation amounted to a stain of the size of a five-shilling piece upon the cap. The blood appeared to have come from the ear.

I do not assent to the inference drawn by the prosecution, —that the *bleeding from the ears* was a proof of congestion arising from forcible compression. Any congestion arising from compression or constriction of the neck, which would have caused effusion of blood from the ears, would have also led to effusion of blood or bloody froth from *the mouth and nostrils*,—to a *bloated and livid condition of the face*, and to *permanent marks of such compression* on *the head, neck, or chest.* The absence of all these conditions, in my judgment, vitiates the inference,— that no other cause could have produced this bleeding from the ears than congestion from forcible compression. I have had occasion to see this bleeding from the ears in cases of murder by strangulation, but it was accompanied by those well-marked indications of violence to the neck and chest, which, in my opinion, are necessary to produce it. Further, it was accompanied by an escape of blood or bloody froth from the mouth and nostrils, and a livid and bloated state of the features. In Mrs. Kirwan's case, if the face when seen by Mr. Hamilton was rather pale, if no blood escaped from mouth or nostrils, and there were no marks of violent compression on the neck or chest, the inference drawn respecting the bleeding from the ears is, in my opinion, erroneous. As the witness who drew this inference did not see the body until thirty-one days after death, he was not in a position to speak positively on the cause of this bleeding from the ears.

The bleeding said to have taken place from the *vagina* did not arise from any wound in that part. I have not known it to occur in drowning. It was not observed in the murder of two females by strangulation in a very violent form, which I have had occasion to examine within the last two years[a]. There

[a] Reg. *v.* Drory, Essex Lent Assizes, 1851; Reg. *v.* Pinckard, Northampton Lent Assizes, 1852.

was most violent constriction and congestion produced in both of these cases, but no effusion of blood from the vagina.

Was this bleeding the result of passive menorrhagia, or the recurrence of menstruation, as a result of shock soon after that function had ceased? In relation to the cause of death, as it did *not proceed from any wound*, it proves nothing. It is as difficult to reconcile this effusion of blood with the theory of death from violence, in a case like this, where no indication of violence from constriction or compression is apparent on the body, as with death from an attack of epilepsy or apoplexy. To assume that it is a *proof* of death from some form of asphyxia, as a result of forcible compression, would be most unjust. It is a rare condition in asphyxia, and not a constant accompaniment or sign of the suffocation or strangulation of females.

The fact that the genital organs were found vascular and injected, amounts to nothing; because the observation was not made until thirty-one days after death, and decomposition in the abdomen had advanced so far as to cause great distention of that cavity, and a pushing up of the diaphragm. Gravitation, as well as the mechanical effect of this compression on the blood contained in the abdominal and pelvic viscera, might account for this increased vascularity. As it was not observed when the body was recent, it is a sign of no value as an indication of the cause of death.

The theory suggested by the prosecution,—that deceased was suffocated by a sheet being placed over her head, derives no support from the appearances of the body. Such a mode of suffocation would not prevent violent struggling, the swallowing of water, the marks of great resistance, of great injury to the back and arms—where rocks and shingle were beneath, the evidence of great pressure on the neck or chest, which could not fail to strike the first observers of the recent body. The prisoner could not have thus destroyed life without wetting his coat as well as his trousers; or without, probably, showing the marks of considerable wetting, of struggling or resistance, on his person or dress. This theory is not supported by the examination of the body. The *heart* is found *empty*, whereas in suffocation the right cavities should be *distended*. If it be suggested that the cavities of the heart may have been filled, but emptied as a result of gaseous putrefaction, then it would be only fair to say, that the inspection, made thirty-one days after death, threw no light on the cause. In a question of life and death it would be most unjust to assume that conditions had existed of which

there was no proof, or to assert that the fulness of the lungs allowed of a strong inference against the prisoner, while the emptiness of the heart was not a circumstance in his favour.

I assert, as my opinion, from a full and unbiassed examination of the medical evidence in this case, that, so far as the appearances of the body are concerned, there is an ENTIRE ABSENCE OF PROOF that death was the result of violence at the hands of another. Persons while bathing, or exposed to the chance of drowning, are often seized with fits which may prove suddenly fatal, although they may allow of a short struggle; the fit may arise from syncope, apoplexy, or epilepsy. Either of the last conditions would, in my opinion, reconcile all the medical circumstances of this remarkable case.

It is the result of twenty years' experience in the investigation of these cases, that the resistance which a healthy and vigorous person[a] can offer to the assault of a murderer, intent upon drowning or suffocating him or her, is in general such as to lead to the infliction of a greater amount of violence than is necessary to insure the death of the victim. The absence of any marks of violence or wounds on the body of Mrs. Kirwan, excepting such small abrasions as might have resulted from accident, may be taken in support of the only view which it appears to me can be drawn,—namely, *that death was not the result of a homicidal drowning* or suffocation, but most probably of a fit resulting from natural causes.

A remarkable case of sudden death from epilepsy, under circumstances which might have led to great suspicion, is recorded by Dr. Ogston in his papers on drowning:—

"A man was in the act of leaving a privy when he was seized with an epileptic fit, and fell with his face in a piece of dirty water which did not exceed a *foot and a half in breadth*, with a depth of from *three to four inches*. When discovered after death, only his mouth and nostrils, and one cheek were found to have been under water"[b].

This case might be easily worked into a case of alleged murder. How could a person have been drowned or have died under such circumstances? Let this be duly considered in drawing inferences from the position of dead bodies found in shallow water.

There can be no doubt that had the inspection of the body of Mrs. Kirwan been most carefully made within forty-eight

[a] Dr. Hatchell describes the body as "that of a fine, healthy woman."
[b] Medical Gazette, May 2, 1851, vol. xlvii. p. 763.

hours after death, we should not now have to speculate on the cause,—we might have had better data for an opinion. In the meantime, because it was not thus and then inspected, conditions of the body, adverse to the presumption of natural death, must not be assumed to have existed in order to work out a charge of murder against a man accused of the crime.

I have always regarded it as a necessary condition to support a charge of murder, that the evidence of the *cause of death from violence* should be distinct, conclusive, and satisfactory. In this case, the medical proofs utterly fail to make out a *violent cause of death.* Reliance is placed on engorgement of the vessels of the lungs and congestion of the vagina, *found only after thirty-one days' interment*, in a decomposed body; while the emptiness of the heart and great blood-vessels,—the absence of salt water from the stomach, mouth, fauces, and lungs,—and the absence of frothy mucus from the air-passages, are conditions adverse to the cause of death assigned by the medical witness for the Crown. The absence of these appearances creates a very strong presumption of natural death; or even in taking an adverse view against the prisoner from other and non-medical circumstances, their absence throws so much doubt on the allegation necessary to prove his guilt, namely, that the death was violent, that he should undoubtedly, with a proper representation of medical facts and inferences by the medical witnesses, have received the benefit of it.

If a man is charged with murder by poison, death from poison must be *proved*,—the appearances in the dead body must not leave it doubtful whether death was caused by disease or poison. If the usual signs of poisoning (inflammation) are absent, a medical witness, unless there be other strong and direct evidence of poisoning, would not be allowed to infer that inflammation might have been present at an early inspection of the body, but had disappeared when he examined it, because in his opinion the condition had been destroyed by changes in the grave. This is conjectural evidence. It is mere matter of opinion, and must not be allowed to weigh against a prisoner when the cause of death is really involved in doubt. Dr. Hatchell, in the case of Mrs. Kirwan, was placed in a difficult position. He had to give an opinion on the cause of death from an inspection made thirty-one days after death, the body having been placed in a wet grave, and decomposition having advanced to a considerable extent. He probably gave the best opinion that he could from the only appearances which he found, but in doing this, he overlooked, as it seems to me, the importance

of other appearances adverse to his view of the cause of death; and, in my judgment, he would have acted more wisely, and more in accordance with the rules of science, had he referred the infiltration of the lungs and the vagina to post-mortem changes. The result of the inspection at that distance of time either proved nothing with regard to the cause of death, or, from the state of the heart and stomach, it proved that death could not have taken place in the manner in which the witness supposed and asserted that it did take place.

Art. VII.—*On Some Leading Facts to be recollected in the Examination of the Fœces in Disease.* By Jonathan Osborne, M. D., King's Professor of Materia Medica, Physician to Mercer's Hospital, &c.

When we reflect that in the digestive tube, commencing at the mouth and ending at the anus, there is a continuous mucous surface of about five times the length of the individual, that is, on the average, about twenty-five feet; that of this surface no more is visible than what can be seen in the mouth and fauces; that from its not possessing that kind of sensibility which, at the surface of the body, we designate as the sense of touch, the symptoms are found not so much in the seat of these affections, as in the influence which they exercise upon other, and often the most remote, organs,—we shall be prepared to acknowledge the importance of the evidence afforded by the discharges from the stomach and bowels, and to enter on the examination of them with a due sense of its value.

The matters thrown off by vomiting afford a variety of indications respecting the state of the stomach, assisting in the diagnosis between merely sympathetic disturbance, torpidity of digestion, excessive action of the acid secreting glands, or inflammation of the mucous surface; and often enable us to determine the nature and amount of the latter, also to distinguish as to the origin of blood poured into its cavity, and frequently to obtain the earliest evidences of cancerous or other malignant disease. These matters, however, I shall now pass over, and confine my attention to the conclusions to be derived from the examination of the fæces.

The most complete chemical examination of them is that of Berzelius, which, although comparatively old in this age

of rapid advancement, yet has not been superseded by any other:

Water, ...		73·3
Bile, ...	0·9	5·7
Albumen, ...	0·9	
Extract, ...	2·7	
Salts, ...	1·2	
Insoluble Residue of Food, . .		7·0
Mucus, Bile, Resin, Fat, &c. . .		14·0
		100·0

A striking fact to be observed in this is, the large proportion of water, approximating to that of the urine, which, according to the same authority, amounts to 93 per cent. of that secretion.

The quantity of the entire discharge is influenced by diet, but still more by torpidity of secretion from the mucous surface, the epithelial scales at their formation containing water, which is afterwards absorbed when retained. Thus in old persons of sedentary habits, also in several animals, the fæces are hard and dry like those of the dog, and consist chiefly of bony or other indigestible materials, resembling the coprolites, or fossil fæces, which promise to throw so much light on the mode of life and internal structure of the animals to which they belonged.

The time occupied in ordinary digestion, i. e. between taking in articles of diet and their arrival at the rectum, appears to be about fourteen hours. This, in each individual, is ascertained by observations with pips of grapes or raisins, which pass down unaltered.

The number of discharges consistent with healthy digestion is much under the influence of habit, averaging from three times daily, or oftener, to once a week. As a general observation, females have the greatest tendency to retain.

In proceeding to the examination of the fæces we have three characters to guide us, which serve as fixed points from which all our observations commence. These are, 1st, the COLOUR; 2nd, the ODOUR; and 3rd, the CONSISTENCE. The colour is acquired in the duodenum, and derived from the bile; the odour, from the glands at the cœcum; and the figure and consistence, from the colon and rectum. Thus we have three distinct sets of marks, affixed by three distinct portions of the tube, and furnishing us with a kind of alphabet, as in the electric telegraph, to inform us of the seat and nature of the disease.

1st. The COLOUR.—When the common duct is obstructed,

as in certain cases of jaundice, the fæces are devoid of colour, having only a grey aspect, resembling that of putty. And here it is necessary to make a careful distinction between the colour of the fæcal masses, as originally formed in the duodenum, and that of the mucous fluid discharged from the surface of the bowels. In many cases of jaundice we see fæces consisting of those white masses resembling putty, but surrounded by yellow or green liquids. In these the secretions from the surface of the intestines are, in common with the blood and urine, more or less charged with bile, but the fæcal masses themselves remain distinct, and continue as they were at first in the duodenum, free from bile, although in health they are the special vehicle for its removal from the body; and this explains a case described by Andral[a], in which he found it difficult to reconcile the fact that, along with jaundice and colourless motions, the patient yet had copious bilious vomitings. In such cases the secretions of the stomach, in common with all the other fluids of the body, may be jaundiced, and the fæces may be even partially stained by them, but their interior resists their further entrance, and they continue distinct up to the time of their expulsion. This observation is the more necessary, as such discharges are often described as bilious, and this superficial and incorrect judgment tends to throw doubt and obscurity over every part of the subject.

In the more transient cases of jaundice sufficient time may not elapse to affect the blood so as to reach the mucus of the intestines, which usually does not become stained until after the discolouration of that part of the conjunctiva which is exposed to light, and the whole discharge thus continues altogether colourless. There is another form of jaundice worthy of particular notice. In this the fæces are well and thoroughly coloured, although the skin, the blood[b], and the urine, continue highly jaundiced. Here, as the bile passes freely into the duodenum, the hepatic duct must be free, and if so, then the cause of the jaundice must exist in the pori biliarii, or in the substance of the liver itself. And this conclusion I have almost uniformly seen verified by the further history of such cases,

[a] Clinique Médicale, by Spillan, Part v. p. 937.

[b] In order to obtain the earliest indication of jaundice in the blood, the following method will be found peculiarly convenient and satisfactory. Obtain a few drops of serum from the patient, which, when bleeding is inexpedient, may always be had from a blister, however small. Diffuse it to the size of half-a-crown on a piece of white porcelain; then drop into the centre one drop of strong nitric acid: a pool is immediately formed, surrounded by a ring of white coagulated albumen, which in a few seconds assumes a beautiful bluish-green colour if bile is present.

revealing, when long protracted, either congestion or cirrhosis of the liver, or scirrhous tumours within its substance.

In health the shades of colour vary from a bright yellow, which is that of the freshest secreted bile, to a dark olive-green, which is the colour it acquires when retained in the gall-bladder. The passage of this black bile, succeeding to feelings of sadness and depression, has no doubt been the origin of the word *melancholy*. Sometimes these discharges take place during the enjoyment of ordinary health, but the individual always experiences a change in his spirits for the better,—cheerfulness and contentment succeeding at once to dejection and moroseness; and what is worthy of remark is, that this improvement in his spirits comes on, not always after the discharge, but sometimes a few hours previously: showing that it is not to the expulsion of it from the bowels, but to the discharge of it from the hepatic ducts, that this happy effect is to be ascribed.

During their stoppage in the colon the colour of the fæces changes from yellow to brown, becoming deeper and approaching more and more to that of sepia when long retained; and even the white masses belonging to jaundice, when retained there, undergo the same change, but certainly in a much less degree. From this we are enabled to judge of the relative age of accumulations in the colon, and, after the manner of geologists, to pronounce our decisions between the old formations and the later deposits.

With respect to blood in the fæces, it assumes three distinct forms: first, when effused into the stomach, and the globules, under the chemical agencies of that organ, acquire a black colour, constituting the melænous discharges passed both by vomiting and purging; second, when effused into the smaller intestines, and in smaller quantity, and mixed up with the fæces so as to impart a reddish colour, as from an addition of ochre or brick-dust, which, to the eye prepared to look for it, is very apparent, although commonly overlooked, and evidently different from any colour which can be imparted by bile. This colour is of frequent occurrence in those cases of enteritic inflammation in which ulcerations of the small intestines are usually found. The third form is when blood is effused so low down in the tube that it is not mixed with the fæces, either solid or fluid. In such cases it is almost always dark, and varies in quantity from those large discharges which have been often attended with fatal consequences, to those cases in which small portions of sanious matter are to be seen scattered through fluid fæces, but not mixed with them, as occurs in ulcerations of the colon; or lastly, to that mere sprinkling

of a few tears of blood shed over the fæcal mass, from hemorrhoidal tumours near the rectum.

The green discharges following the use of calomel in children have been too remarkable to be entirely overlooked. By Dr. Graves, and other eminent observers, they have been considered as products of irritation of the mucous surface, and not necessarily to consist of bile, as had hitherto been held; and in 1845 Dr. Golding Bird[a], from his experiments, regarded the presence of green stools to be indicative, not of a copious secretion of bile, but of a congested state of the portal system, in which blood is exuded very slowly, and in small quantities, so as to allow of the colour to be affected by the gases and secretions present in the intestines,—a state of things which he considered to differ from melæna only in this, that in the latter the effusion of blood is so copious and sudden as not to give time for this change to take place.

It must be admitted that sulphuretted hydrogen is capable of changing the colouring matter of the blood to an olive-green; and that sanguineous exudations may in this way be the source of green evacuations; but that they are not exclusively the cause of them is to be inferred, not only from the dark-green colour which the bile receives when retained in the gall-bladder, but from the experiments of Dr. Michea[b], from which, in the cases submitted to his observation, this green discharge was proved to be connected with excess of bile. As those green motions, then, may be produced from either of these causes, and in some from the coexistence of both, they offer an interesting subject of inquiry to those engaged in the treatment of diseases of children, in order to obtain tests to identify and distinguish them.

In Asiatic cholera, as is well known, the fæces cease to have either colour, odour, or consistence, being the *conjee* fluid containing albumen diffused in water, the proportion of which is generally more or less according to the quantity of fluid drank, while the epithelial scales disappear almost entirely, but subsequently re-appear, according as recovery approaches.

Although most substances taken into the stomach are decolorized in the process of digestion, yet some are to be noted as remarkable exceptions. These are, spinach, logwood, coffee, and porter, which, in this respect, resist the action of the stomach, and impart their own colour to the fæces. The black colour produced by the salts of iron may generally be explained by their action on astringent matters in the bowels;

[a] Medical Gazette.

[b] Lancet, January, 1849.

but this fails when the same effect is produced in persons whose diet consists only of potatoes, milk, and animal food.

2. The ODOUR of fæces, which of all those occurring in nature is the most disgusting, appears to have been especially intended to deter animals from feeding on their own excrements,—a practice into which some of the more ravenous species would be likely to fall. This odour is not produced by putrefaction, as is generally presumed by the vulgar, for the fæces have no alkaline re-action, and are rather acid; and to suppose putrid matter to be retained more or less every day within the system would be contrary to all analogy, which shows such to exercise a poisonous and often fatal influence. That this odour is derived from the secretions of the glands at the cœcum is proved by the fact, that the fæces do not acquire it until they have arrived at this part; that here it is at its greatest intensity; and that it diminishes in the fæces according as they proceed on their passage to the rectum.

This secretion at the cœcum is altered by various circumstances. Sometimes it acquires a pungency almost intolerable, as is observed even in cases of slight diarrhœa, when, after the more solid contents of the colon and rectum have passed, they are succeeded by dark-coloured fluid motions, consisting of fresh arrivals from the cœcum, of such overwhelming potency that even the most experienced and apathetic physicians are compelled to a speedy flight, and content themselves with describing them as "dark, bilious, and highly offensive." The most decided proof of the vital origin of this odour, and of its independence of the food taken, is afforded at the commencement of dentition in infants. The fæces, which, previously to that time, are of a merely sour and sickly odour, suddenly acquire that most abominable and peculiar odour belonging to ulceration of a bony surface, or such as comes from the ear in destructive suppuration of the labyrinth; and from this alone the practitioner may generally predict a fit of teething. On the other hand, in some of the most severe and protracted cases of enteritic fever, once the bowels have been cleared of their old contents, there is no longer any odour in the discharges; and this continues all through the fever until a favourable change takes place, when the natural odour is resumed, according as the natural functions of the parts are restored.

3. The SHAPE and SIZE of the fæces are derived from the large intestines. In the horse, the rabbit, the goat, the sheep, and the pig, being those animals which occur most frequently to our observation, they are moulded so as to present us with casts of the cells of the colon. In the human subject

their first shape is also derived from the cells of the colon, and they are sometimes indurated so as to resist further compression, forming in such cases fragments of various sizes, known as scybala; but, when retaining their softness, in general they are altered in their passage through the rectum, the action of the sphincters causing both elongation and curvation. Enlargement of the prostate forms a groove in the anterior, and frequently compresses them as if they had passed through a flattening mill; while in the case of internal hemorrhoidal tumours, they show, by their grooves or notches, and streaks of blood or sanies corresponding therewith, both the size and situation, and often may throw important light on the nature, of such tumours.

When the mucous membrane of the rectum is inflamed, as in dysentery, then in the height of the disease the discharges are altogether mucous, sanious, or purulent, and an abatement is usually taking place when fæcal matters are allowed to pass. But in inflammations of the colon, as long as the rectum remains unaffected, the discharges are fæculent but frequent and largely diluted with mucus, so that, from an inspection of them alone, the distinction may be made between dysentery and diarrhœa.

In irritation or inflammation of large tracts of the intestines, the discharges exhibit alterations corresponding with the amount of irritation, and in proportion as they are presented either by the whole, or only by a part of the discharge. We are also informed of the extent of surface affected. These alterations may be described under four general characteristics, as follows.

The *first* and slightest degree of irritation is indicated by discharges differing from those of health only in greater fluidity, and absence of shape or consistence. Such occurs, for example, when a healthy individual takes a saline purgative. All our ordinary purgatives act by irritation, and after the solid contents of the large intestines have been evacuated, then follow the loose motions forwarded from the cœcum and small intestines, mixed and accompanied by large quantities of mucus.

The *second* degree of irritation is indicated by discharges of a waxy consistence, of a lesser specific gravity, floating on the urine, and frequently intermixed with air bubbles. Such are rarely seen from the operation of a gentle purgative in a healthy individual, and are almost always preceded or accompanied by symptoms, more or less marked, of irritation in the intestines, such as pain, heat, or tormina.

The *third* degree of irritation is indicated by discharges of

a powder without coherence, and either diffused or lying at the bottom of the urine. The colour of it is generally pale, but varies in this respect according to the state of the biliary secretion, or the degree in which blood may have been effused. It appears to consist of minute exudations of fibrine or coagulated albumen, and constitutes most of the discharges seen in the milder cases of enteritis, and is of most common occurrence in all idiopathic fevers accompanied by white dry tongue. In whatever cases these discharges occur, they are a certain evidence not only of the existence of mucous irritation in the bowels, but of a degree of irritation requiring, even under the most favourable circumstances, some days for its removal.

The *fourth* and highest degree of irritation is denoted by discharges consisting of white shreds or tubes of fibrinous exudation. These are the products of the same kind of inflammation seen in croup, or the most violent forms of cynanche, and consist of lymph thrown out in the same way. With respect to purulent discharges from ulcerations in the small intestines, although such must occur, yet I have not been able to distinguish them, nor, according to my observations, can pus be recognised at all, unless it is unmixed, as when it comes from the lowest portions of the intestines.

As connected with the appearances belonging to this fourth degree of irritation, I wish to remind the reader that castor oil occasionally, but by no means uniformly, or even frequently, produces discharges liable to be mistaken for the above. These are white ovoid masses, in colour and consistence resembling boiled macaroni, and about the size of grapes. They have been chemically examined by Dr. Golding Bird[a], and he considers them to be a hard soap, formed by the union of the oil with some alkaline matter in the bowels.

Heterogeneous motions are of frequent occurrence. In these we see one part of the motion fluid, another solid, or one part pulverulent, another waxy or in shreds, or all the four together. Such different appearances in the one motion are the result of different degrees of irritation in distinct portions of the tube; and it is our duty, by the assistance of these indications, compared with the symptoms of the case, to ascertain the seat of the irritation. For this purpose, we have several well-established facts. Thus, in hemorrhoidal tumours or fissures, pain at or immediately after passing a motion; in inflammation of the rectum, tenesmus; in inflammation of the colon, diarrhœa; in inflammation at the cœcum, tendency to constipation, local pain at

[a] Medical Gazette, November, 1834.

that part, and more or less peritoneal inflammation supervening; and in inflammation of the small intestines, sense of fulness around the umbilicus, with sudden bursts of diarrhœa, alternating with constipation. Taking these facts in connexion with the discharges, they will be found to serve as mutual interpreters of each other.

The cases of fæcal vomiting on record appear to me to belong merely to regurgitations of matters coloured with bile from the portion of the duodenum below the biliary duct. It has never befallen me to witness any instance in which fæces having the triple character, namely, colour, odour, and consistence, have been vomited; and I have met with only one report of a case in which such an event undoubtedly took place. It is in Dr. Abercrombie's work. In it there was an ulcer of the stomach, corresponding to one of the arch of the colon; and the fully formed fæces from the colon passed directly from it into the stomach, and were rejected by vomiting. I am aware that many cases of fæcal vomiting have been mentioned, but it was recognised as such merely from colour, and in disregard of the other peculiar characters of fæces.

In conclusion, seeing that the examination of the fæces leads to practical deductions not less important than those derived from the examination of the urine, and referring to parts more immediately under the control of our medicines, I cannot refrain from expressing a hope, that the subject may yet be adequately illustrated by means of coloured engravings. The votaries of medical science who have penetrated within the cerements of the dead ought no longer to be contented with merely a surperficial acknowledgement of the importance of the subject. In prescribing for the ailments of a long and tortuous cavern, the interior of which we cannot see, we may be truly said to be groping in the dark, and we are admonished both by theory and experience to examine the secretions of those surfaces which, when correctly interpreted, serve as faithful exponents of their actual state, and are capable of furnishing the best indications for the choice of remedies.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Traité des Maladies Vénériennes. Par A. VIDAL (de Cassis), Chirurgien de l'Hôpital du Midi (Vénériens), &c. Avec Planches gravées et coloriées. Paris: Victor Masson. 1853. 8vo, pp. lxiii. and 552.

Syphilitic Diseases; their Pathology, Diagnosis, and Treatment, including Experimental Researches on Inoculation, as a Differential Agent in Testing the Character of these Affections. By JOHN C. EGAN, M.D., M.R.I.A., &c. London: Churchill., 1853. 8vo, pp. 346.

WE have devoted so much of our space, during the past year to a development of the views of the great syphilographer, Ricord, which embody an exposition of most of the disputed opinions held by modern surgeons regarding the venereal disease, that we do not feel it necessary to re-open the subject now at any length. Yet we cannot avoid noticing shortly the two most recently published volumes on Syphilis, the one by a French, and the other by an Irish, practitioner; the former based on experience acquired in the Lock Hospital in Paris, and the latter on that gained in the Lock Hospital of Dublin: for it is right we should mention that, although Dr. Egan's book has on its title-page the name of a London publisher, it is from the pen of a Dublin surgeon, and bears the imprint of a Dublin printer.

The French Academy of Medicine devoted a series of successive sittings, in the summer and autumn of last year, to a discussion on syphilis, chiefly with reference to the transmissibility of secondary symptoms, and to the prevention of the disease by means of inoculation with its virus. The conclusions arrived at by vote were, we may say, *nil*, but the warmth with which the disputed questions were discussed, and the per-

sonalities which, in the heat of debate, passed between the most eminent of the profession in Paris, invested these sittings of the Academy with unusual interest; and it was evident that whether *syphilization* was or was not effective to ward off the disease from their patients, the very word even excited for a time a *syphilomania* amongst the Parisian surgeons. The publication of the splendidly illustrated volume of M. Vidal, now before us, may be looked upon, perhaps, as the first literary fruit of the interest thus excited: we must, however, in justice to him, say, that he has not permitted any of the angry feelings of the debate to appear in his pages, for his opinions are advanced with temper, and supported by arguments free from personalities.

"Books on the venereal disease," says the author, "are almost innumerable, but nearly all of them have been more or less admittedly written with the intention of building up or of overturning a system. From them talent is not always absent, and many are remarkable for the spirited and brilliant style which they display, but the matter contained is addressed to those already masters of the subject. My intention is to write for those unlearned in the disease, and who have not much time to spare in acquiring a knowledge of it."

M. Vidal's work is divided into four parts. The first treats of those venereal affections which are termed primary; that is to say, those lesions which are in general produced upon contaminated parts, and within a short period after the exciting cause has been applied. The second,—of secondary venereal diseases; those which are ordinarily observed *after* the primary symptoms, those, in short, which succeed them. In the third are described the venereal affections of new-born children,—infantile syphilis, together with the questions of hereditary transmission, and of communication from the infant to the nurse and from the nurse to the infant. And the fourth is occupied with remarks on the prophylaxis of the venereal disease, including also observations on the regulations of medical police for its prevention.

These sections are preceded by an introduction, termed by the author preliminary remarks, in which are contained: first, an excellent and complete history of the disease,—M. Vidal taking the same view as Dr. Egan, that syphilis is not an affection of modern origin, appearing for the first time at the close of the fifteenth century, as was attempted to be proved by Astruc and his many followers, but that it existed from the remotest antiquity. Second, observations on the *syphilitic virus or poison*, the qualities of which are revealed by but a single pro-

perty, that of reproduction, "for, placed in contact with the living tissues, under certain conditions, it ordinarily gives rise to a morbid state, the result of which is its reproduction and multiplication." The question of the existence of one or of a plurality of poisons is here discussed, but this point we shall recur to when noticing Dr. Egan's book; and the modes of contagion, and of transmission of the virus, are also referred to. Third, some reflections on the causes of error in observation on the part of those who investigate the phenomena of the disease. Fourth, a review of the value to be placed on direct experiment as a means of ascertaining the truth of opinions advanced. Fifth, an account of the results arrived at by inoculation both in man and the lower animals. Sixth, a notice of syphilization, defined by M. Auzias (Turenne), the originator of the term and the practice, "to be a state of the organism in which it will no longer evolve the syphilitic virus, in consequence of a sort of saturation;"—in fact, a species of syphilitic vaccination: this subject, as we have already said, was one of those so warmly discussed on a recent occasion by the French Academy of Medicine, and the opinion of M. Vidal is consonant with the almost universal conclusion there arrived at, that syphilization is of no value either as a preventive or as a curative means. And seventh, the transmissibility of secondary symptoms: the truth of this doctrine, which, as our readers are aware, is altogether opposed to the opinion of M. Ricord, was distinctly announced by M. Vidal in an essay which he laid before the Academy, and which gave rise to the discussion already referred to; in it he supported his statements by the results of experiments, of which he gives a summary here.

In the section which treats of *primary* syphilitic affections, the author describes the various forms of blennorrhagia, as it occurs in both sexes,—preferring, with Ricord and most of the French school, this term to gonorrhœa,—reviewing most minutely the various forms under which it appears, and the symptoms, both immediate and consecutive. In the treatment of this affection he puts especially prominent the fact, that it is truly a local inflammatory affection,—an *urethritis*.

"The following is the manner," says M. Vidal, "in which I treat a blennorrhagia:—I commence always with antiphlogistics, which I graduate according to the duration and the intensity of the disease. Thus, in the greater number of cases, I prescribe at first, baths, emollient drinks, and rest. If the patient is strong and plethoric, the blennorrhagia intense and painful, with frequent erections, I use blood-letting also, generally by the application of twenty leeches to the perineum. It

sometimes happens that these means, with low diet, suffice: that is to say, the disease declines after the eighth day of their employment. If the discharge then persists, I have recourse to copaiba or cubebs, but usually to the two combined in the form of electuary,—containing two parts of the latter to one of the former, with the addition of a sufficiency of oil of peppermint; of this about two ounces should be taken every five days in divided doses." . . . "I never in the first instance employ injections, I only use them when the above means fail to check the discharge completely, and then I prescribe astringent, not caustic, injections. The following is my favourite form; it is not strictly chemical, but its practical value is undoubted; from two to four injections should be made with it in the course of the day:—Agitate in a bottle five ounces of rose water, and eight grains each of acetate of lead and of sulphate of zinc. When I use the nitrate of silver, it is in general as an astringent, in the proportion of three grains to six ounces and a half of rose water."

The author states that he has found this plan of treatment uniformly successful in his hands, both in hospital and in private practice. This we doubt not; but our readers, we know, are fully aware of the difficulty of getting patients to submit to such restrictions as it of necessity would demand; and the majority of them will therefore, we feel certain, prefer the judicious use of injections from the first, if they be not inclined to try the *abortive* plan of treatment. We must, however, tell them, that to the latter M. Vidal most decidedly objects in consequence of both its uncertainty and danger.

M. Vidal commences his description of chancre by announcing that the venereal virus produces two principal results: the first, a form of inflammation termed blennorrhagia, which has been already described; and the second, a form of ulceration termed chancre. He thus announces his belief that these two forms, as we may term them, of the venereal disease, have a unity of origin,—a view which is opposed to the experience and opinion of nearly all British surgeons, and of many of his continental brethren. We shall not reproduce his reasons or his arguments here, but content ourselves with saying, that we are not satisfied with either; indeed we think that both are fully met by M. Ricord in the analysis of his Letters contained in our volumes for last year.

The various forms and stages of chancre are clearly and well described; and we know no work in which a more complete or more faithful account of the symptoms of the venereal disease is to be found. While the author recognises and admits

the existence of several varieties of chancre, he yet asserts that all are attended with more or less *induration*.

After some excellent remarks on the complications, the diagnosis, and the prognosis, M. Vidal proceeds to speak of the treatment of chancre. Believing that the local symptoms are coincident with the constitutional poisoning, he considers the abortive treatment—the destruction of the specific ulcer by some caustic—altogether useless; he does not himself practise cauterization "until reparation has commenced in the chancre, until it has assumed the characters of a simple wound," and then merely for the purpose of repressing exuberant granulations, or of stimulating the surface when it is indolent. Here we are completely at issue with the author; we have seen in cases without number what answered to all the characters of a true Hunterian chancre yield to *free* cauterization, either with nitrate of silver or nitric acid, when employed sufficiently early, all symptoms of syphilis disappear by simple constitutional treatment, without the least ill consequence, and no secondary symptoms follow. And we differ the more with him, therefore, when we find him stating that every case, even when submitted to treatment in its very earliest stage, requires a continued use for two months of mercury: the form he recommends being similar to that prescribed by Dupuytren, namely, one pill morning and night, but containing only a fifth of a grain of corrosive sublimate, and the same quantity of the watery extract of opium. This, he says, hastens the cicatrization of the chancre, and prevents the development of secondary symptoms, or, if it does not prevent them, diminishes much their intensity. In phagedenic chancres the author agrees with all practitioners of the present day, that mercury should not be given, but that antiphlogistics, or tonics and stimulants, according to individual circumstances, must be administered internally, while the local symptoms are combated by powerful caustics, and sedative applications afterwards.

Phymosis and paraphymosis are next treated under the heading of "affections which may be regarded as complications of chancre;" and bubo, syphilitic vegetations, and mucous pustules, are considered in the fifth, sixth, and seventh chapters of this division of the work.

In the second section of the book are described the numerous affections which affect the human organism, as a consequential result of the primary symptoms of the venereal disease. M. Vidal includes them all under the denomination *consecutive*, abolishing the terms *secondary* and *tertiary* altogether, and in so doing we think he has acted most judiciously, if it were for

no other reason than, as he says, the so-called tertiary symptoms not uncommonly precede the secondary. He considers them in two chapters. The first is devoted to a general review of their characters, the date of their appearance, their determining causes, syphilitic fever, the state of the blood in persons affected constitutionally with syphilis; as to whether the virus exists in it and is inoculable; the question as to whether the same person can be affected a second time with *true* syphilis as indicated by the occurrence of consecutive symptoms; and the therapeutics of the subject, or an account of the different remedies used for its treatment, their mode of action, and effects. The second chapter treats of the several consecutive symptoms individually: affections of the skin — the syphilides; diseases of the appendages of the skin; diseases of the mucous membranes; diseases of the eyes; diseases of the testicles; diseases of the areolar tissue; diseases of the muscles, the tendons, and the aponeuroses; diseases of the bones and the periosteum; and diseases of the viscera.

We can neither select from nor attempt to analyze this portion of the volume; every page of it abounds in valuable information concerning the disease, and the various disputed questions are carefully and clearly argued, and in every instance the reasons for the conclusions arrived at distinctly stated. But his observations must be studied in their entirety; to endeavour any condensation of them would mar their value, and they are well deserving of the careful study of every student and practitioner.

M. Vidal commences his third section, in which, as we have already said, he considers the syphilitic affections of new-born children, with an account of the symptoms and pathological anatomy of the disease, when it appears in early infancy. He then enters into the controversy regarding the causation of syphilis in infancy, a point respecting which our readers know how much difference of opinion exists; we shall, therefore, give an abstract of the author's views.

"The new-born child," he says, "may be infected by the mother, the father, or the nurse." The child may derive syphilis from the *mother* in consequence of her having suffered from the disease previously to conception, or of having contracted it after conception during pregnancy. In the former case, if the virus existing in the system has not been removed, if the germ of the poison has not been destroyed, the child cannot escape. In the latter, the certainty of the infection will depend on the period of pregnancy at which the mother had contracted the disease; the nearer it occurred to the date of conception, the

more is the infant to be feared for; but it has not been proved to be safe at any date. The more active the symptoms are in the mother, the more certain will the infection of the child be, and for this reason it is most sure to follow when the syphilides or affections of the mucous membranes are present.

The influence of the *father* in transmitting the disease to his offspring is not so manifest as that of the mother; but M. Vidal thinks that it is sufficiently proven, and cites some cases in illustration. The following remarkable instance occurred lately in our own practice, and as it is one calculated, we think, to set the question at rest, we shall give it here. We were lately consulted for a case of syphilitic psoriasis in a boy aged 11, whose father was also labouring under the disease at the same time; the mother, who brought the child to us, was perfectly healthy, and free from any eruption on the skin, and stated that she never had any illness of moment. The history of the case, as narrated to us by her, and corroborated by her husband in writing, is as follows:—She is his second wife: by his first wife, who died twenty-five years ago, he had a large family of sons and daughters, who were all most healthy, and are now men and women, in the enjoyment of sound constitutions; none of them have died. After the death of his first wife, the husband contracted syphilis, which was followed in about six months, he says, by sore throat, pains in the bones, and the eruption on his skin, psoriasis—from which he still suffers. His second wife, whom he married three years after the death of the first, bore him *seven* children, all of whom were attacked shortly after birth with an eruption on the skin precisely similar, the mother states, to that on the father's person; six of the children died at an early age, in a year or two after birth, and this child, about whom we were consulted, the youngest, alone survives; in him the cutaneous eruption, when we first saw him, covered nearly the whole surface of the body, presenting the peculiar characteristics of syphilitic psoriasis, and agreeing in all its phenomena with the eruption on his father; it has now, after somewhat more than three months' *specific* treatment, nearly disappeared. This short history needs, we think, no comment; it has convinced us of the transmissibility of syphilis from the father to the child.

The influence of the *nurse* in infecting the child is more decided than that of either parent; and a syphilitic child may in its turn infect a healthy nurse. In the former case the poison is evidently transmitted through the milk, for in some cases, which, however, M. Vidal regards as doubtful, the child has been infected, although at the time no mani-

fest syphilitic symptom was apparent in the nurse, the syphilitic diathesis alone being present. Examples of the infecting of the nurse by the child whom she is suckling are of frequent occurrence, and must have occurred in the practice of most persons; yet some still deny the possibility of the contagion of syphilis in this way, and adduce instances in which such a transmission did not occur; but we agree with the author, that "such facts have merely a negative value, they cannot avail aught against positive proofs, which, on this point, are innumerable." It is these examples of the transmission of syphilis from the nurse to the child, and from the child to the nurse, which afford the strongest arguments in favour of the contagiousness of secondary symptoms, and, therefore, all those who disbelieve in *their* being contagious, of course strenuously deny the possibility of such a means of transmission of the disease.

The observations on the diagnosis, prognosis, and treatment of infantile syphilis we must pass over, merely commending them to the notice of our readers.

In the fourth and last section, M. Vidal considers the prophylaxis of the venereal disease under two heads: first, with reference to individuals; and second, with reference to the public in general—medical police; we do not find any novel views on either division of the subject to detain us.

In closing our observations on M. Vidal's work, we beg to recommend it most warmly to our readers, for we regard it as the most complete treatise, in any language, on the venereal disease; and it is, moreover, illustrated with singularly faithful and beautifully executed coloured drawings. These are six in number: the first representing, in two figures, *acute posthitis* and *chronic balano-posthitis;* the second, in three figures, several forms of *chancre;* the third, a case of *chancre in the urethra*, followed by gangrenous perforation of the bladder; the fourth, in two figures, *warty vegetations* on the prepuce, and *mucous pustules* around the anus; and the fifth and sixth, *syphilitic eruptions* on the skin. Anything more true to nature, in pathological illustration, we have never witnessed: indeed we would consider them in themselves, without the letterpress, as positively cheap for the ten francs, the extraordinary low price at which the book is published.

Although we have given precedence in our notice to the work of M. Vidal, it is not that we consider it in any respect more important than Dr. Egan's volume; we did so out of courtesy to him as being a foreigner, and because he furnishes

a more complete and extended treatise on venereal diseases than our own countryman does.

The first important question discussed by Dr. Egan is, as to how far inoculation is useful in forming a differential diagnosis in syphilitic diseases, and this, with the results arrived at by the author's experiments, instituted for the purpose of testing the accuracy of the conclusions of Ricord, is considered in the second chapter. In consequence of their great importance, and the careful manner in which the inquiry was conducted, we shall give Dr. Egan's conclusions in his own words.

"From the foregoing observations and experiments the following deductions may be drawn:—

"1stly. That the virus of gonorrhœa is different in its nature and properties from that of chancre; inoculations from the former never giving rise to a specific ulcer; while that of the latter, when inserted beneath the skin during the stage of ulceration, is generally succeeded by the characteristic pustule.

"2ndly. That abrasions of the mucous membrane are likely to ensue from the irritating quality of a gonorrhœal discharge in its early or incipient stage. That, although no appreciable effects result from the inoculation of these excoriations, still mild forms of secondary symptoms have been observed to supervene on this affection, when no other species of disease could be detected on most careful and repeated examinations. In no case, however, has the matter of gonorrhœa produced venereal ulcers.

"3rdly. That sufficient testimony has been advanced to prove that those severe constitutional affections, reported to have resulted from gonorrhœa alone, have been caused by concealed urethral chancres, and not by any peculiar virus contained in the discharge; and hence has arisen the mistake of recommending the employment of mercury for the cure of uncomplicated gonorrhœa.

"4thly. Sympathetic buboes, usually consequent on gonorrhœal inflammation, are uninoculable; although here a mild description of secondary symptoms is occasionally met with.

"5thly. Buboes, the result of absorption of the poison of a venereal ulcer, can *generally* be inoculated, provided the operation be conducted in accordance with established rules. From the failures, however, which have occurred during the course of these experiments, I am obliged to dissent from the aphorism laid down by M. Ricord, that, when applied to the diagnosis of buboes, inoculation may be considered as forming an unexceptionable and pathognomonic sign.

"6thly. The superficial non-indurated primary ulcer is sometimes inoculable, at other times not; each description of sores is occasionally followed by mild constitutional symptoms.

"7thly. That in the indurated and excavated ulcer, inoculation supplies a valuable and unerring test, the characteristic pustule being always the result of the operation.

"8thly. That the cause of failure in inoculation of the pus of phagedenic ulcers, has been probably owing to the time at which the matter was taken,—viz., at a period when the process of ulceration was rapidly advancing, whereas the most favourable opportunity would seem to be in the intermediate stage between ulceration and reparation, when the virus would appear to concentrate itself. The ulcer produced by inoculation is identical in its nature with that from which the pus is taken.

"9thly. Secondary and tertiary symptoms produce no effect upon inoculation.

"10thly. If the inoculated part be freely touched with nitrate of silver previous to the fifth day, no ill consequences are likely to ensue."

Dr. Egan next inquires as to whether venereal diseases are caused by a plurality of poisons? And after reproducing most clearly and fairly the chief arguments advanced for and against the theory, he gives as the result of his own experience, without asserting his opinion dogmatically, that he is inclined to answer the question in the affirmative.

Gonorrhœa in the male[a], the author considers under two heads: first, external or preputial,—the posthitis and balano-posthitis of the French; and second, internal or urethral. In the treatment of the latter, he recommends strict attention to be paid to its two stages—the inflammatory and the purulent, advising the specific remedies not to be employed when the former merely is present, as, from the use simply of rest and antiphlogistics, he has seen it disappear without passing into the second stage. In the purulent stage he has confidence in the efficacy of both cubebs and copaiba, whether separately or combined, but he prefers to alternate them; injections he also uses, and most correctly lays much stress on the importance of the manner in which they are employed, but he is altogether opposed to the strong caustic injections so strongly recommended by some practitioners, and he has no faith in them as an abortive treatment.

Dr. Egan next describes the diseases which succeed gonorrhœa in the male, before proceeding to speak of that affection in the female. Those he treats of are stricture, inflammation of the prostate gland, irritable bladder, epididymitis, rheumatism, and ophthalmia. Stricture, we think, should not be thus classed; that it undoubtedly very often occurs as a result of blennorrhagia cannot be disputed, but we regard it as equally indisputable that the disease is met with, and not uncommonly,

[a] Dr. Egan "employs this term, although objectionable, as being the one most familiar to English readers." We certainly prefer to use the word blennorrhagia.

in persons who have never been affected with any form of syphilis. So important an affection is, we must also say, disposed of by the author in altogether too cursory a manner, but *ten* pages of large type being allotted to its consideration.

In speaking of gonorrhœa in females Dr. Egan states it as the result of his experience, based upon the details of 112 cases which he examined with the speculum, and of which a statistical table is given, that the disease "in the female is not confined to the vagina, as was formerly supposed, but frequently extends to the uterus;" a condition which he thinks sufficient to account for the persistence of the discharge for so lengthened a period in many cases. Our readers cannot but be struck with the analogical support which this statement affords to the opinion recently expressed by Mr. Colles, in our pages[a], as to the cause of the long continuance and obstinacy of gonorrhœa in the male in many instances. The diseases described by the author as consequent on gonorrhœa in the female are ovaritis, vegetations, condylomata, and enlargement of the external labia.

In commencing the second section of his book, the author avows his belief that the different varieties of secondary and tertiary symptoms depend on the peculiar form of the primary sore; thus following up the views of Carmichael, whose classifications also he adopts, although he, at the same time, states that he "feels assured two or three other forms of primary ulcers might be added to the list;" but fears that "the practical utility of such an augmentation would be insufficient to overbalance the confusion which is inevitable to a departure from established rules." Four forms only of primary sores are therefore described, and in connexion with each are detailed the resulting secondary and tertiary symptoms, together with the necessary treatment. First, "the superficial primary ulcer:" followed by *papular* eruption; increased vascularity of throat; pains simulating rheumatism; and iritis. Second, "primary ulcer, distinguished by elevated margins, centre slightly excavated, and even without granulations:" followed by increased vascularity with a dry and granulated appearance of the throat; *pustular* eruption; painful distention of the joints; and nodes. Third, "phagedenic primary ulcer:" followed by sloughing ulceration at the back of the pharynx; *rupial* eruption; severe pains in the joints; and nodes. And fourth, "the indurated primary ulcer"—the true Hunterian chancre: followed by excavated ulcer of the tonsil; enlargement of the cervical glands;

[a] Vol. x. p. 102.

scaly eruption; pains in the heads and shafts of the bones; and nodes. Each form, and its secondary results, are well and carefully described by the author, and the special treatment requisite set forth, illustrative cases being constantly introduced; but, as we expect that the work will be studied by every practising surgeon, we shall refer to the book itself for details of description and therapeutical management. *Tubercular* eruptions, and caries and exfoliation of the nasal bones, are treated in a distinct chapter, as constituting "unclassified constitutional affections;" and the following are described as "affections common to all classes:" muddiness of the skin; alopecia; affections of the nails; affections of the tongue; syphilitic testicle; and bubo.

For the reason just given, we shall content ourselves with a simple enumeration of the subjects considered in the three remaining chapters: they are, "syphilis in pregnant women and infants; syphilis as contracted from nursed children;" and "general observations on the treatment of syphilitic diseases." But before we conclude, we must express our opinion that Dr. Egan's book is one in all respects worthy of praise; his views, manifestly based upon clinical experience, are throughout decidedly yet modestly expressed; and even should all his arguments not convince, they cannot fail to gain the serious attention of the reader. The style may be considered by some too ornate for a strictly professional work, yet it is otherwise unexceptionable, and possesses the special merits of clearness and condensation. The typography of the volume we notice merely to say, that the Dublin printer does in nowise discredit the London publisher, to the getting up of whose books we have so often adverted in terms of the highest admiration.

Clinical Reports of Ovarian and Uterine Diseases. With Commentaries. By Robert Lee, M.D., F.R.S., &c. London: Churchill. 1853. Foolscap 8vo, pp. 340.

This work—the production of a physician eminent for his contributions to obstetric physiology, pathology, and medicine—consists of five Reports upon the principal diseases of the female generative organs in the unimpregnated state. Accompanying each Report is a collection of cases from the author's personal experience; and this constitutes the chief, if not the sole, feature of novelty or importance in the book, as nearly all the other matter is but a reprint of various essays

and papers which have been published by Dr. Lee at different times during the last twenty years, in the Cyclopædia of Practical Medicine, the Medico-Chirurgical Transactions, &c. &c. Some of these essays, though very excellent at the time of their first appearance, have of course fallen behind the present state of knowledge, and would require considerable revision and addition to give them rank amongst the writings of the year 1853, or even to adapt them to their present mode of publication.

The first Report is upon "the structure, functions, and diseases of the ovaria, and the histories of one hundred and seventy cases." The observations upon these subjects we may dismiss without further notice, as they have been long known to the profession. This Report contains also the most important practical details of all the cases of ovarian disease which have come under Dr. Lee's observation, and of which he preserved written histories. Though all these cases illustrate the *diagnosis* of ovarian disease, they cannot all be said to be examples of it, as in many instances (e. g. Cases XVII. XXXVIII. XLIX. LV. LVII. LVIII. LX. LXIX. LXXV. LXXXVI. LXXXVII. XCIII. CXL., &c.) it must be a matter of doubt whether the tumour was really ovarian or not; and in two, Cases XXXI. and LXXV., post-mortem examination showed the ovaries to be not at all implicated. We are far from wishing, however, to underrate the value of this extended series of clinical observations. Such a body of facts cannot but afford data, at all times available, for deciding many questions of great practical moment, connected with disease of these organs. In the course of the remarks appended to them, Dr. Lee takes the opportunity to denounce the "uterine sound or poker," as a "useless and dangerous instrument," whose employment, even by those accustomed to its frequent use he has never in any single instance seen to yield information, and on several occasions to have led to the commission of gross blunders. That it is a dangerous instrument,—in other words, one capable of doing much harm if incautiously or unadvisedly used,—we hold as strongly as does Dr. Lee himself; but we must differ with him when he would have us discard it as a useless instrument. We have known its introduction to have unquestionably given rise to most unpleasant consequences; but these cases presented symptoms which, in our judgment, should decidedly have forbidden its employment. The advocates of the uterine sound are in a measure to blame for this, in not sufficiently insisting upon its cautious and restricted use. Though its employment may be free from danger in such educated and skilful

hands as Dr. Simpson's, this certainly does not warrant our proclaiming it as a safe and proper instrument to be used at the discretion of every practitioner of midwifery.

This Report concludes with an analysis of 162 cases of ovariotomy[a], which the author says will "furnish data to enable us to determine whether it would not contribute equally to the interests of humanity, and the honour of British surgery, if this operation, which was facetiously termed belly-ripping by Robert Liston, were wholly abandoned." He thus indecisively speaks of the operation here, and devotes twenty pages to the table of cases, although at page 14 we find the following unqualified condemnatory statement:

"On the practice of extirpating the ovaria when diseased, it is not necessary to offer any observations, as it has been abandoned by all who have made themselves acquainted with the pathology of these organs."

These discordant statements from the same author, and in the same book, would seem very unaccountable, did we not recollect, that there was an interval of some seventeen or eighteen years between the dates when they were originally put forth. By a little care and correction the author might have avoided leaving himself open to the charge of such strange inconsistencies.

The first seventeen pages of the third Report are from an article in the Cyclopædia of Practical Medicine, upon diseases of the Fallopian tubes, malformations of the uterus, and inflammatory diseases of it when unimpregnated: then follows a short and rather caustic notice of Dr. Balbirnie's thesis, concluding with this sentence:

"Nearly half the women in Great Britain, married and unmarried, rich and poor, virtuous and vicious, have been declared by some recent writers to be afflicted with the most disgusting diseases—*engorgements*, *indurations*, *inflammations*, *ulcerations*, *erosions* of the os and cervix uteri, which can only be discovered with the speculum, and cured with caustic."

To correct these "errors, misrepresentations, and abuses," Dr. Lee presented a communication to the Royal Medical and Chirurgical Society in 1850, and which was published in the Transactions of that body. The object of this essay virtually was to produce a re-action against the abuses of the speculum, and in it the author endeavours to prove, that the cases are very few where the diagnosis could not be satisfactorily made

[a] Reprinted from the thirty-fourth volume of the Medico-Chirurgical Transactions.

out without its assistance; and secondly, that many of the diseases for whose discovery it was avowedly used had no real existence.

Now, we most heartily bestow on Dr. Lee our warmest approbation for making, as he did, a bold and decided stand against the wholesale abuse and disgraceful practices to which the uterine speculum was rendered subservient. We believe that the evil had attained around him an enormous magnitude, and that its exposure was urgently needed. But we think that Dr. Lee, in his laudable anxiety to eradicate these corruptions. committed the fault of most reformers—he went a little too far, and overstepped the "happy medium of truth." Not that we can doubt the assertions of his own experience,—as, for instance, when he says, he "never detected a small polypus within the os uteri, or hanging through it, which he had failed to detect with the finger,"—but that we are convinced the experience of most other men will be at issue with his regarding the utility of this instrument as an auxiliary means of diagnosis, and as to the frequency of ulcerative disease of the os uteri.

Let it not be supposed that, in thus dissenting from the views of Dr. Lee, we are defending or justifying his opponents in their extravagant employment of the speculum, or deviating from the sentiments we have uniformly expressed on its use in the pages of this Journal. Far from it. We merely wish to rescue the instrument from that oblivion to which, we fear, Dr. Lee's remarks tend to consign it, and to point out its true and proper position amongst medical appliances. So far back as May, 1849,—prior to Dr. Lee's paper, be it observed,—we ventured to express our strong condemnation of the employment of the speculum in unmarried females, except on the clearest grounds of its necessity, and our belief of the infrequency of this necessity. We further added our conviction, "that the cause of medical science and medical ethics would be much benefited by a monograph from some competent observer on the abuses of the speculum." Since then we have taken every opportunity to reiterate the same opinions, so satisfied were we that the unlimited extent to which the instrument was being employed could not but be morally and medically wrong. In some of Dr. Lee's remarks we entirely acquiesce, and the following passage we quote with much satisfaction:—

"In unmarried women, whatever their rank or condition of life may be, the integrity of their structure should not be destroyed with the speculum, nor their modesty wounded by an examination of any kind, without a necessity for such a proceeding being clearly shown. Even in married women who are barren, or who have had children,

it is unjustifiable, on the grounds of propriety and morality, to institute an examination of any sort, unless the symptoms warrant the supposition that the uterus is displaced, or is in a morbid condition, the nature of which cannot be determined by the symptoms alone."

The author has accumulated a vast deal of evidence from post-mortem examinations, and from his own observation, to establish the extreme rarity of uterine ulceration. He further assures us that, on the nature, diagnosis, and treatment of the "red, swollen, hypertrophied, granular states" of the os uteri, little or no information is derived from the use of the speculum. And lastly, we find him stating his "conviction, that rational constitutional treatment, and injections, sedative and astringent, will, in these morbid conditions of the os uteri, succeed ultimately in producing more successful results than escharotics."

It is an unpleasant task to attempt the decision of questions involving the credibility of the disputants, or their faculties for observation. This remark aptly applies to the matter before us. Instead, therefore, of commenting upon Dr. Lee's opinions above quoted, we shall simply imitate his example, and, in as few words as possible, state the general conclusions to which our own experience and observation lead us upon the points alluded to, and it is only by the accumulated results of individual experience that their truth must be eventually decided. First, then, we believe inflammatory and ulcerative affections of the os and cervix uteri to be tolerably frequent amongst married women. Secondly, we think that topical applications, including the use of escharotics, form an important part in the treatment of these affections; but that constitutional remedies should, at the same time, never be omitted. And, lastly, we have found the speculum of eminent utility in the diagnosis and treatment of very many lesions of the uterus and vagina. For the recognition of disease in these parts it presents this obvious and incalculable advantage,—that by its means we can call in to our aid an additional sense, otherwise, perhaps, wholly unavailable; and surely, at the present day, when physical diagnosis is so highly valued and cultivated, what stronger recommendation could be adduced in its favour? At the same time we quite agree with Dr. Lee, that in all cancerous diseases of the uterus the speculum is not only valueless, or nearly so, as an assistant to diagnosis, but is positively injurious to the patient.

This Report contains sixty-five cases intended to illustrate "disorders of the uterine functions;" but amongst them are very many wholly uninstructive narrations, destitute of point, and without practical application. In some the state of the

uterus is not stated; in very many the diagnosis is not given, nor the data on which to form it; in still more the treatment is entirely omitted, or dismissed in four or five words; whilst in only a few instances are we informed of the result of the case. To show that these representations are not unfounded, we shall quote two or three of the histories:—

"CASE I.—August 23rd, 1832. Mrs. D., aged 34, had suffered for several years from severe headach, for the relief of which leeches, blisters, setons, &c., had been employed. She had been delivered six months before, and appeared exhausted by nursing her child. For several days she had complained of pain in the back part of the head, and the muscles of the neck and extremities had been affected with spasms, which I considered hysterical; the pupils were slightly dilated; pulse 100, full and strong; tongue loaded. Believing that the symptoms did not arise from congestion of the brain, but from an opposite condition, leeches were not applied to the temples; but they were bathed with cold vinegar and water, and the headach and spasms subsided on the exhibition of a draught, with thirty drops of tincture of henbane and camphor mixture. Purgatives were afterwards employed."

"CASE V.—September 7th, 1833. Sarah C., aged 22, had long been in delicate health; had suffered much from nervous headachs, and dysmenorrhœa and profuse leucorrhœa. Looks pale and dejected, and complains of pain in the back and in the left side of the abdomen, increased by pressure between the umbilicus and ilium extending down the thigh. There is no hardness or swelling in this situation. The pain comes on in paroxysms. No blood passed with the urine; no evidence of disease in the kidneys."

"CASE VI.—October 9th, 1833. Sarah Mills, aged 20: has never menstruated. Every month she has violent pains in the head and bowels. The headach sometimes lasts for seven days, and then entirely ceases. Her person is small, and imperfectly developed. Seen with Mr. Balderston."

"CASE XXI.—February 29th, 1836. Mrs. B., aged 53, married in early life, and has never been pregnant. The cause of the sterility was not ascertained. She had suffered long from rheumatic gout and palpitation of the heart, and agonizing pains, at times spreading over the whole left side of the chest. Her history led to the belief that she had suffered from hysteria."

"CASE XXV.—April 20th, 1836. Mrs. D., aged 37; married fifteen years, and never pregnant. Menstruation perfectly regular, and without pain. During the whole period of fifteen years no symptoms had been experienced to lead to a suspicion that organic disease existed about the uterine organs, or functional disorder of any kind except the sterility. For six months before I saw this patient she had begun to suffer from fulness about the head, headach, giddiness, heavy sleep, uncomfortable dreams, and a feeling as if the

hands were larger than natural, and deprived partially of power. Leeches, purgatives, and low diet soon removed these symptoms."

Clinical histories of this description do not serve any practical purpose that we can see, as they do not tend to illustrate the diagnosis, pathology, or therapeutics of disease. In fact they are merely isolated facts, which scarcely ever admit of generalization. The series is not, however, without some valuable records, which will afford instruction, and occasionally, too, amusement, to the attentive reader.

We now come to the third Report "on fibrous tumours and polypi of the uterus, with the histories of fifty cases." Two papers by the author, in the nineteenth and thirty-third volumes of the Medico-Chirurgical Transactions, supply all the researches—except some on the history of uterine polypi, contained in this division of the work. These, as no doubt our readers are aware, were considered very admirable monographs, and especially valuable for their pathological information. The cases given in the Report are recorded more in detail, but still concisely. They are full of instruction, and their careful perusal will amply recompense the student, and even the practitioner. Cancerous diseases of the uterus form the subject of the fourth Report; the author, as before, transcribing his observations from the Cyclopædia of Practical Medicine published in 1835. This chapter is illustrated with the details of 101 cases. After relating a part of these cases, Dr. Lee remarks,—

"From these cases it will be seen that the fungoid tumour of the uterus, or cauliflower excrescence, scirrhus, carcinoma, and corroding ulcer, are merely different forms of the same malignant disease; that the morbid changes may commence in the mucous and muscular coats of the fundus and body of the uterus, though they are observed to begin most frequently in the orifice and cervix. It may be inferred, also, from these histories, that inflammation of the uterus does not give rise to cancer in any form, and that the progress of the disease to a fatal termination is never arrested by those remedies which subdue inflammation. Three of the individuals whose cases have been related were under thirty years of age, three between thirty and forty, sixteen from forty to fifty, and fourteen from fifty to sixty."

And again, at the conclusion of this Report, he states the following inferences:—

"1. That cancer may commence in the mucous, muscular, or peritoneal coats of the uterus, but most frequently in the os and cervix.

"2. That the earliest symptoms of the disease, in a large proportion of cases, were discharges of sanguineous, serous, or white-coloured fluid from the vagina, with sense of uneasiness or pain, more or less acute, within and around the pelvis.

"3. That cancerous disease of the uterus presents itself most frequently in the form of induration and ulceration of the os and cervix uteri and vagina; or ulceration without induration; or in the form of fungoid tumours, usually called cauliflower excrescences, growing from one or both of the lips, being often associated with encephaloid or colloid masses, and true scirrhus of the remaining portions of the uterus and contiguous viscera.

"4. That in no case could cancerous disease of the uterus be referred to inflammation or any mechanical cause; and that its fatal progress was never arrested by cauterizing the morbid structures through the speculum, nor any other method of treatment."

Dr. Lee's condemnation of all attempts at radical cure in cauliflower excrescence of the os uteri may be too sweeping. We must recollect it is a disease rarely seen in an early stage, when alone an operation could have a good chance of successfully extirpating it; but, notwithstanding, cases have been recorded by Boivin and Duges, Ashwell, Simpson, Montgomery, and Churchill, where, at all events, a temporary arrest of the disease, if not a complete cure, was obtained by removal of the growth and the part of cervix from which it sprang.

The fifth and last Report contains observations upon the pathology of the vagina, labia, &c., from the Cyclopædia of Practical Medicine, and an extended and valuable series of cases illustrating partial and complete closure of the vagina, prolapse of the uterus, vagina, rectum, and bladder, and diseases of the meatus urinarius, nymphæ and labia, &c. There is also a description of the nerves of the uterus, bladder, vagina, and rectum, from the author's paper in the Transactions of the Royal Society. Amongst the cases is one which, if we mistake not, appeared in the Lancet a year or two since, containing an account of an instrument removed from the vagina, and which the writer was pleased to designate "the *impaling*, or infernal uterine machine." What the instrument was, thus designated, no one for a single moment doubted. Now, this mode of treating any important question can never advance the interests of science, or promote the cause of truth, and is, therefore, much to be deprecated. The contrivance alluded to was designed to serve a beneficial purpose, and came recommended with the weight of authority; surely, then, it was entitled to full and impartial consideration. If Dr. Lee seriously disapproved of the instrument—and in our opinion it is a highly objectiona-

ble one—he would have done essential service by stating the grounds and reasons for his disapproval. This would have been the most effectual way to have exposed its defects or dangers, if the instrument is really bad in principle or dangerous in practice.

From the foregoing extracts and remarks, the reader can hardly be at any loss to form an opinion of the work before us. A reprint of the author's essays and papers, most of which were written so long ago as the year 1835, cannot surely add to his fame, or contain anything new to medical men; whilst it awakens a regret that he did not incorporate with them his subsequent experience and more matured views, or, at all events, bring his observations up to the present state of obstetric science. This, indeed, would have given the book some air of originality, and great additional attraction. Viewed simply as a collection of cases—and this is the aspect under which it should be chiefly regarded—the book is a most valuable one, and justly entitles its author to the best thanks of the profession for the industry and labour required in its compilation.

Some Observations on the Contamination of Water by the Poison of Lead: and its Effects on the Human Body; together with Remarks on some other Modes in which Lead may be injurious in Domestic Life. By James Bower Harrison, M. R. C. S. L., &c., formerly Surgeon to the Ardwick and Ancoats Dispensary. London: Churchill. 1852. Foolscap 8vo, pp. 196.

This little Treatise contains an able and excellent, though concise, description of the deleterious effects observed to arise from the continued use of water holding compounds of lead in solution or suspension. Mr. Harrison has evidently bestowed considerable attention on the subject of chronic lead-poisoning, and has brought together a number of cases illustrative of the various affections observed to result from *slow* saturnine intoxication. His descriptions are exceedingly graphic, and through every page of the volume we have evidence of his diligent research and accurate habits of observation. We may allude particularly to his remarks on the *cumulative* effect of lead on the system, a considerable period of time often elapsing before any mischief becomes evident; on the apparent *elective* action of the poison—this mineral displaying its effects by choice, as it were, upon some one person from among a household or family who are placed, apparently, in parallel circumstances,—thus tending often to throw doubt and difficulty upon the diagnosis;

and on the effects of habit, as well as idiosyncrasy, in the determination of this election. He does not consider the blue discolouration of the gums as pathognomonic, but admits, however, its importance as being a very constant and generally an early symptom. Having considered the more usual effects of lead,—such as colic and paralysis, as well as the paralysis of sensibility, which sometimes occurs along with loss of motion, or even independent of it, and which was first noticed by M. Beau[a],—he makes some remarks on the occasional occurrence of deafness, but more frequently of amaurosis, temporary or permanent. Speaking of some very serious forms of encephalic derangement, he says:—

"Besides these paralytic affections, epilepsy, delirium, and coma may arise. The colic may suddenly cease, and the fearful truce be interrupted by an attack of convulsions still more terrible. There is something characteristic in the cerebral disturbance which arises from lead. It seems to partake of the wildness and uncertainty which distinguish the operation of a poison. The delirium may be gentle or fierce, and the epilepsy may pass by quick transitions into coma, which shall again alternate with excitement in a manner little explicable without a true knowledge of the cause. The symptoms are altogether less permanent and more capricious in their character than when they arise from ordinary cerebral disturbance; but a great deal of light is shed upon these affections by considering the series of morbid phenomena which have preceded them. If there have been colic or paralysis, and tearing pains or other indications of the saturnine influence, then there can be little doubt as to the nature of the malady. Yet, it is to be borne in mind, that the cerebral symptoms may be the first, and may be sudden in their invasion; but they do not pass through the regular gradations which distinguish inflammatory lesions. The period of excitement does not pass into one of prostration, but coma and excitement seem to give place to each other, and the physical force seems to be preserved in a manner which could not be maintained if the symptoms were dependent on progressive changes in the brain. Here, too, as in most other cases, the pulse will be consulted with advantage. The pulse is not accelerated by the poison of lead, and, if it be rendered rapid by convulsions, it will be found to subside again after their cessation. Nor will the pulse be found rapid at the commencement of the cerebral disturbance, as we should expect would be the case if it arose from an inflammatory derangement. Where delirium arises, it is a changeable delirium—passing from one form of disorder to another, until an abrupt attack of epilepsy or a sudden coma interrupts its progress. There is something in all this which reminds us of hysteric caprice; but we are dealing with a more fearful complaint

[a] See a Paper on Saturnine Insensibility of the Skin, in the Gazette des Hôpitaux, No. 54.

than hysteria, and the result may be a fatal catastrophe. As the various forms of disorder break in upon us unexpectedly, we are kept in alarm as to what may next arise, and we can only assure the friends of the danger and uncertainty of the complaint. The coma which succeeds the epilepsy of lead does not pass off so rapidly as the ordinary stupor which follows an epileptic fit. It may last many hours—it may continue many days. The intellect does not recover readily from the attack; and even after the patient appears to have regained his reason, he will be found for a considerable period to be still under the influence of the poison,—in a sort of sub-delirium, which requires some discrimination."

His remarks upon treatment are judicious, especially as relating to that of colic, in which affection he has found free purgation to be the most efficacious measure; and he places most reliance on the use of croton oil, especially in the more obstinate degrees of constipation. In paralysis he advocates the *cautious* administration of strychnia.

On the whole, it is a well-timed and well written book; and, as to its general style, the extract given above may be taken as a fair specimen. We are assured our readers will find in it much information, useful not only to the physiologist and practitioner, but to the medical jurist.

The Practical and Descriptive Anatomy of the Human Body. By Thomas H. Ledwich, F. R. C. S. I., and Edward Ledwich, F. R. C. S. I., Lecturers on Human and Comparative Anatomy in the Original School of Medicine, Dublin. Dublin: Fannin and Co. 1852. 12mo, pp. 922.

A Manual of Human Anatomy: Descriptive, Practical, and General. By Robert Knox, M. D., F. R. S. E., &c. Illustrated by 250 highly finished Wood Engravings, from Drawings by Dr. Westmacott. London: Renshaw. 1853. Foolscap, 8vo, pp. 672.

If on any one branch of medical science more than another the Dublin School has gained a special character, it is for the contributions which its members have made to anatomy; not that they have advanced many new views or novel teachings as to the structure of the human body, but that they have patiently devoted themselves to the clearing up of what was before deemed obscure, and to the simplifying of a study which is the source and origin of all knowledge to both the physician and the surgeon. Harrison's Dublin Dissector has for years been the text-book

for students in all parts of the world to which the English language has reached, and still holds its ground in the face of many competitors; but its merits or its utility cannot blind us to the many excellent points in the volume just published by the Messrs. Ledwich, and which is now before us. Some may, perhaps, ask, what need is there for a new book on human anatomy, when so many modern works of admitted value already exist on this subject. To this we would reply, that there is always room for a *good* book: the greater the number of observers, the more is truth advanced.

Messrs. Ledwich's work is evidently written directly from observations made in the dissecting-room, and is, therefore, peculiarly adapted as a hand-book for the student who seeks his information in the only way in which it can be correctly obtained,—from the dead body itself. That such is the design of the authors in its publication is sufficiently apparent from the omission of those pictorial illustrations, in the form of woodcuts, which of late years have become so much the fashion in anatomical works, and which, we fear, are too often relied upon by the learner as substitutes for the personal use of the dissecting-knife. The volume is divided into six sections, which individually treat of the bones, the ligaments, the muscles, the cavities, the nerves, and the arteries, veins, and absorbents. Each of these anatomical divisions of the human body is most carefully, minutely, and exactly described in, to use the authors' own words, "a systematic, not a discursive style, thus allowing a greater amount of anatomical knowledge to be condensed" into its pages. The relations of parts are especially dwelt upon—a point, the value of which needs to our readers no comment; and this is so completely done, that to us, who have always been of the opinion that the best manuals for the dissector are those in which anatomy is taught in regions, the present volume jars less with our views than any other of a similar arrangement with which we are acquainted. Were there any part of the book to which we would feel inclined to take exception, it is to the account of the dissection of the brain. Though not directly stating that they prefer the method they adopt of dissecting the nervous centre in the common and convenient way,—from above downwards,—in using this plan for the purpose of description, the authors countenance the continuance of what, since the publication of Mr. Solly's work, must be deemed as tending to teach merely a dry list of names without reference to structure, function, or analogy. This is, however, a minor defect, which, we trust, will be remedied in a future edition. Our notice of an anatomical book must necessarily be brief; for such a work,

from its nature, admits neither of abstract, of analysis, nor of extract. We feel confident that this volume must, from its intrinsic merits, become a standard manual for the dissecting-room, and that its publication will fully sustain the already high character of Dublin as a school for the study of practical anatomy.

In placing Dr. Knox's book at the head of this notice we have no intention of drawing any invidious comparison between the two Treatises. To those who remember the practical teachings of Dr. Knox, in his dissecting-room in Edinburgh, his name will afford sufficient guarantee for the execution of his task; and we doubt not that they will be not alone pleased in renewing their acquaintance with the author, but will recommend his work to any young friends they may chance to have engaged in the study of anatomy.

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1. *Disease in Childhood; its common Causes, and Directions for its Practical Management.* By Robert Ellis, F. L. S., &c. London: G. Cox. 1852. Foolscap 8vo., pp. 288.

2. *On a New Method of Treating certain Diseases of the Cervix Uteri.* By Robert Ellis, F. L. S., &c. London: G. Cox. 1852. Pamphlet, pp. 23.

These two works, by the same author, are associated merely out of convenience. They obviously require separate examination.

1. Although Mr. Ellis' work on childhood is an exclusively popular one, we do not hesitate to give it a passing notice, as its author seems to be actuated by philanthropic motives, and lays down what we consider to be sound and just principles for the management of infancy and childhood. For exemplifying and illustrating on the large scale the effects of the many hurtful practices and influences which at present operate amongst us in the destruction of young children, Mr. Ellis has drawn largely from the Registrar-General's tables: the numerical facts thence derived, forming, as it were, the basis of his observations. The book is divided into ten chapters, the last four of which relate to the leading symptoms and domestic management of the special diseases of infancy. The directions given are not in any way designed to supersede the physician's assistance, but solely to point out to the inexperienced mother the

early indications of those complaints, and the general hygienic principles which should regulate their treatment.

In all important points the author's views accord with those so ably and so clearly put forward by Dr. Andrew Combe in his admirable "Treatise on the Physiological and Moral Management of Infancy," a work—we may in passing remark—which has done more to remove prejudice, and to correct error upon this subject, than any other that ever appeared. In a book of this kind novelty or originality is hardly to be expected, and the one before us forms no exception to the rule. We would observe, however, that Mr. Ellis speaks approvingly of *gelatine*, as an auxiliary article of food for young or delicate infants, given in addition to milk, not as a substitute for it. This our own experience confirms, and as gelatine is not usually recommended for the purpose, we shall venture to quote the author's remarks upon it:

"As regards experimental evidence of the usefulness of this material, I have little hesitation in saying, that when judiciously used as an occasional adjunct to the food, it will be found to deserve the confidence of the medical attendant and of the parent; and the experience of numerous authorities in this country and on the Continent confirms these views. The best way of giving gelatine to an infant is by adding it in small proportions to the warm and sweetened milk and water of the ordinary meal. It is most conveniently kept in the form of a jelly, made either from isinglass, prepared gelatine, or the calf's-foot, one or two spoonfuls of which may be easily melted and added to the meal. Of course neither wine (except by medical advice), nor any other flavouring, will be added to the jelly. Healthy children do not require any addition,—but it is well to know that such an addition as this is harmless."

2. The object of the second publication of Mr. Ellis is to introduce to the favourable notice of the profession the surgical application of electric heat for the cauterization of the diseased cervix uteri. The author gives us some of the results of his own experience of the use of this remedy; and the cases he relates plainly exhibit its valuable properties. He further assures us, that by this method of treatment, "intractable disease has rapidly assumed a healthy character; indurative, and even inflammatory hypertrophy, have gradually disappeared, and an amount of progressive and rapid amendment has taken place, which he has never been able to secure with the most diligent employment of ordinary escharotics." In justice to Mr. Ellis, and to our obstetric readers, we feel bound to subjoin his description of this agent, and the mode of using it; but we must altogether abstain from expressing any opinion as to its merits.

"The instrument consists essentially of two conductors of the current electricity, the lower ends of which are connected with a battery, and the upper are united by a platina wire coiled around a porcelain tube. A good-sized silver catheter, straightened out and the end cut off, forms the body of my instrument. At the upper end it was slit open and broached so as to form a socket for the porcelain cauterizer, and also to admit the internal wire to pass out. Within the silver tube a piece of stout copper wire, clothed with an insulating covering—an old elastic catheter answers every purpose—is contained, and appears at the upper extremity, where the wire is left bare for about half an inch, for the attachment of the platina wire. On connecting the lower end of this wire with one wire of the battery, and the surface of the silver tube with the other, we have a very firm, simple, and compact arrangement of the two poles. At the upper end, where the heat is to be developed, the poles are separated by a tube of porcelain, a little thicker than the ordinary stick of nitrate of silver. The object of this tube is to support the coil of platina wire intervening between the extremities of the poles, that is to say, between the end of the silver tube and that of its contained copper wire. But it fulfils a far more important purpose—it serves as a reservoir of heat, and gives, in short, to the instrument all its novelty and value in a surgical sense. About a foot of thin platina wire is made into a coil, and the one end being firmly connected to the internal copper wire, and the other to the upper end of the silver tube, the circuit is thus completed, and the electric current, in passing from the copper wire to the silver tube, heats to incandescence the platina wire through which the connexion is made, as this is coiled round the tube of porcelain (or, what answers equally well, an inch and a half of the stem of a common tobacco pipe), its heat is imparted to that, and a body of intensely heated material is thus obtained over an extent of about three-quarters of an inch in length. Immediately that the circuit is broken by removing the wire from the battery from its contact with the surface of the silver tube, the heat disappears, reappearing instantly on making contact again."

The battery power employed with the above contrivance generally consists of two Groves' batteries of four cells each. We believe that with this new agent of Mr. Ellis, the escharotic resources of surgery are fairly exhausted upon the cervix uteri. In point of strength it may be said to form the maximum extreme of the range of caustic applications that have been used for the treatment of diseases of the uterus. It is, therefore, some satisfaction to think that we have at last reached an ultimatum even in one therapeutic direction. There is, perhaps, no other organ or part of the human economy which has been subjected to the action of such a variety of caustics—potential and actual—of every kind and degree, from the solution of

nitrate of silver upwards, including, in the various gradations, iodine, sulphate of copper, nitric acid, acid nitrate of mercury, solid lunar caustic, potassa fusa, iron at a red heat, iron at a white heat, and finally, to crown all, Mr. Ellis's wire of "intense" and "self-maintained heat," "capable of producing a far deeper eschar than that of the common cautery." Surely such diverse and powerful modes of local treatment argue some unsoundness in the therapeutic principles which guide us. Furthermore, when we find the *topical* treatment of uterine ulceration holding so prominent and so exclusive a place, and consisting of such potent remedies, we feel strongly inclined to think that the doctrine of the "constitutional origin of local diseases" is too much overlooked, or neglected by practitioners, in the class of ulcers now under consideration, and that we should endeavour to heal them more through the constitution and less through the speculum.

The Nature, Symptoms, and Treatment of Consumption: being the Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London. By RICHARD PAYNE COTTON, M. D., &c., Assistant-Physician to the Hospital for Consumption and Diseases of the Chest. London: Churchill. 1852. 8vo, pp. 286.

Pulmonary Consumption and its Treatment. By WILLOUGHBY MARSHALL BURSLEM, M. D. London: Churchill. 1852. 8vo, pp. 160.

IF to the public at large, more especially in the British islands, pulmonary consumption has proved the most fertile cause of suffering and death, and thus been justly ranked as the disease most to be dreaded by man, it has, in no less degree, afforded the most frequent theme for the medical writer, and the most anxious subject for investigation by the practical physician. It could not, then, but have resulted that much useless and effete theories as to the nature, pathology, and treatment of tubercular phthisis should have been published, to incumber our literature; while, as might equally have been expected, our knowledge on the subject was at the same time considerably advanced by the multitude of observers that were engaged in the inquiry. Yet, withal, much still remains for diligent research, and therefore medical societies both at home and abroad, year after year, propose this disease for investigation by prize essayists. As may be seen from the title of Dr. Cotton's book,

its origin has been due to this cause, the work having gained for him the Fothergillian Gold Medal of the Medical Society of London in the year 1851.

Why should it happen that a prize essay in medicine or surgery so rarely comes up to the expectation of the reader, or advances in aught the subject on which it has been written? This is a difficult question to answer satisfactorily, though very easy to offer conjectures upon: and yet so true is it that such is the case, the practised critic invariably opens prize volumes with somewhat prejudiced feelings, knowing from experience how little is in general to be gleaned from their contents either for himself or his readers, and how much chaff is to be sifted for even a small modicum of wheat. Nor can we say that Dr. Cotton's book forms any special exception to this almost universal rule; it is true we have read very many prize essays far inferior both in style and amount of information conveyed, nevertheless we have not found sufficient *matériel* therein to induce us to give it a place amongst the classical works of medical literature likely to survive our time.

The book is divided into three parts, the first of which treats of the nature, the second of the symptoms, and the third of the treatment of consumption. We shall take a short glance at each section, noticing the several points which in the perusal of the volume have attracted our attention.

Dr. Cotton's observations on the nature of the disease do not appear to us to differ much from the more recently published views on the subject, or to add anything additional worthy of special note. His definition is at least very open to objection:

> "The term phthisis is now universally and exclusively applied to a peculiar and obscure condition of the whole system, in which the healthy materials required for the growth and reparation of the body are imperfectly supplied by the process of nutrition; whilst the elements of a morbid substance, finding their way into the blood, are deposited as *tubercle* in certain internal organs—chiefly the lungs—ultimately causing their destruction and death."

The imperfect supply of the healthy materials is the result of the disease, and therefore cannot be the disease itself; and how do the elements of a morbid substance *find* their way into the blood, or where do they come from? Indeed we think that the author renders the "obscure" condition still more obscure by his definition.

The microscopical characters of tubercle have been very differently described by different observers; of these differences a short notice is given, and Dr. Cotton concludes that

the disparity in the descriptions is to be explained by "the circumstance that *tubercle is not always of the same structure:* it differs in different cases according to the *degree of phthisis* under which it is generated; and *it may differ in the same case according to the particular organ in which it is found.*" Modern observers universally admit the well-known varieties of tubercle, but this assumption of the author, as to there being numerous forms of the morbid product, is not, we think, proved even by his own arguments.

In the fourth section of the first part are some judicious observations on the curability of consumption, especially in its early stages; but we must confess that the opening paragraph, in which it is stated that "Prior to the appearance of tubercle phthisis is very frequently within the control of remedial measures," rather puzzled us to comprehend, inasmuch as our belief, confirmed, if requisite, by the author's definition given above, was, that the presence of tubercle constitutes the essence of the disease. As one of the ways in which recovery may take place in consumption, Dr. Cotton avows his belief in the possibility of the *absorption* of tubercle,—thus differing from many modern pathologists, and especially from those who view the question in the chemical light of this morbid deposit being altogether unorganizable; but he brings forward no stronger argument in support of an opinion so opposed to what we regard as a correct view than the assertion,—that he cannot doubt its occasional occurrence from having witnessed so many instances of complete recovery "after every general and physical symptom of tubercular deposition had been most unmistakeably manifested"! The author, while maintaining its extreme rarity, admits the possibility of a cure in even the last stage of phthisis, although he has never met with an unequivocal example of its occurrence. With him both our opinion and experience quite agree, as also with reference to the great power modern therapeutics have given us over phthisis in, as we would term it, *staying* the disease.

The following statement, which is deduced from 1000 observations, is given in the eighth chapter, in which the predisposing causes of consumption are treated of. It refers to the *Influence of Age,* and the latter paragraph, from tending to correct an erroneous but very common impression amongst both the profession and the public, is of especial importance, as bearing upon life assurance. It follows a Table in which the ages are given in decennial periods.

"A glance at this Table shows that the disease is most frequent between the ages of twenty and thirty,—more than 39 per cent. hav-

ing occurred within this period; that the next age most favourable to its development is from thirty to forty years; that the next to this is from ten to twenty years; and that after the age of forty its frequency gradually lessens, until, as we approach the 'threescore years and ten,' few cases present themselves. It is a prevalent idea, but obviously an incorrect one, that after having passed the meridian of life we become exempt from consumption;—the Table showing that the disease is not infrequent up to the age of sixty, and that even after that it is far from being unknown."

We have always thought that hereditary transmission has been rather overrated as a cause of phthisis, and this view is borne out by the history of the 1000 cases above referred to by the author; for from among them but "367, or rather more than one-third, were members of consumptive families; whilst in the remaining 633, or in somewhat less than two-thirds, the disease could not be shown to have proceeded from hereditary causes." Here, however, we must guard against being misunderstood; what we mean to assert is, that although children born of consumptive parents are more apt than others to be carried off by the disease, yet in the aggregate of a given number of cases of phthisis it has, in a majority of them, been generated in the system by some cause other than hereditary transmission. On this point Dr. Graves well remarks:—"I believe it often happens that a man will get consumption by confiding too much in the purity of his blood; and I have known some cases of neglected cough terminate in debility and consumption, because the patient was not apprehensive of any danger, from the circumstance that none of his ancestors ever had the slightest taint of phthisis. If a tiger from the wilds of Africa, who can boast of a line of ancestors as free from phthisis as any of us, be brought into this country, and debilitated by confinement and impure air, and a climate to which he is unaccustomed, you will frequently find that he will die phthisical. Negroes, none of whose progenitors laboured under any form of phthisis, will get consumption in Great Britain. The same occurrence takes place with respect to monkeys and other animals, who are naturally inhabitants of a climate having a striking difference in temperature from that into which they are imported"[a].

In describing the symptoms of consumption, to the consideration of which the second part of the volume is devoted, Dr. Cotton divides them into two stages or periods: the first that preceding the formation of pulmonary tubercles, and the

[a] Clinical Lectures, by Neligan, vol. ii. p. 94.

second that subsequent to their development. This arrangement differs from that of Louis, which we have always regarded as the most advantageous, both for diagnosis and treatment, and which is very generally adopted: namely, into those which are present antecedent to the softening of tubercle, and those which exist subsequent to that change. The author's classification of the symptoms is open to the objection we already made, that phthisis does not really exist until *after* tubercle has been deposited. Moreover, how can this first stage of his be diagnosed? He says:—

"Although this early period of consumption has been but little dwelt upon by medical writers, it is, I think, very often distinguishable by the presence, in a greater or less degree, of the following train of symptoms:—From some cause, for which no good reason can be assigned, there is a slow but marked diminution of bodily vigour, compelling the individual to abandon many of his accustomed pursuits: the spirits, nevertheless, are good, and not only is the idea of consumption never entertained, but any allusion to it is at once ridiculed. So general, indeed, is this hopeful condition,—this almost instinctive blindness to the real cause of distress, that in its absence, however suspicious certain symptoms appear, these may, with much probability of accuracy, be pronounced unconnected with phthisis. The complexion is, at the same time, pallid or sallow; the expression is that of care united with animation; the features are somewhat sharpened; the movements of the body are hurried and anxious; the mental condition is irritable and capricious; whilst every act betrays an effort, sometimes instinctive, and at others voluntary, to conceal the presence of disease. The appetite is uncertain, and there are frequent indications of imperfect digestion, as well as of a tendency to passive diarrhœa. The pulse is slow, small, and easily excited. The sleep is restless, unrefreshing, and occasionally attended by perspirations. Loss of weight is of invariable occurrence; sometimes the decrease is so rapid that it will attract the attention of friends; at other times it requires the periodical use of the weighing machine to detect it; the latter, perhaps, is the most usual, but I have met with examples of such rapid emaciation that several pounds have been lost within a few days."

Now we do not see how this enumeration of symptoms can distinguish consumption from ordinary dyspepsia in the male, or from common menstrual derangement in the female. Indeed we would be inclined to designate this first stage of Dr. Cotton's *as a stage before the first*, although he tells his readers in a note that it "does not correspond with the *tuberculous cachexia* so fully described by Sir James Clark; it is a more advanced condition of the disease."

In describing the characteristics of the sputa of phthisis,—

so well expressed as regards shape and form by the term *nummulated* of the older writers,—the author remarks that he has not uncommonly perceived them to possess a peculiar sickening odour, which he compares to that of a newly plastered room; the cause of this he conjectures to depend on the presence of calcareous matter, chalky particles being often visible in them. This remark is new to us, and the occasional existence of the fetor we shall not deny, although we would be loath to place any diagnostic value on its presence. He very correctly enjoins the use of the microscope in the examination of the sputa in phthisis.

Loss of weight Dr. Cotton looks upon as one of the most valuable aids to the diagnosis of the disease: it was noticed by him in every one of the thousand cases already referred to. The following observations on this point we regard as highly valuable:—

"For a long time I sought to ascertain whether there existed what might be termed a *phthisical weight;*—that is to say, whether by the weight alone, in its relation to age and height, any person might be pronounced consumptive. This was done by comparing the height, weight, and age of a number of consumptive persons, both with those in health, and those suffering with other chronic diseases; but the result showed that no value could possibly attach to such an observation. Many healthy individuals were found to weigh less than others, of the same height and age, who were in an advanced stage of phthisis; whilst in those under the influence of other diseases, every possible variety in weight was discovered. It may, I think, be concluded, that health is compatible with a great diversity of weight; and that neither consumption, nor any other disease, has any standard of weight peculiar to itself."

Another very important sign in phthisis is the change in shape which the chest undergoes, but this is of course valuable as a diagnostic mark chiefly in the advanced stages of the disease, when the symptoms and physical signs are so manifest that we do not require its aid to enable us to come to a conclusion. Moreover, in acute phthisis, the alterations described by the author do not, in our experience, take place in any marked degree; they are chiefly manifested in those individuals in whom consumption makes but slow progress. Dr. Cotton's observations on this part of the diagnosis are, on the whole, good; but we think he lays too much stress on change being discoverable in the early stages, for he might thus lead an inexperienced physician to give a wrong prognosis, based on the parietes of the chest presenting a normal appearance.

The chest-measurer, as the author calls it, meaning thereby,

we presume, the stethometer of Dr. Quain, he states to be a useful instrument for a very accurate estimation of the changes in the respiratory movements, but thinks "the practised eye and properly applied hand are capable of affording every information which is worthy of influencing the diagnosis." Our opinion of the stethometer is even less favourable than that of Dr. Cotton; for our experience of its use induces us to regard it as likely to lead to very fallacious results: indeed in the same individual, applied on the same part of the chest, we have made it indicate the most different conditions by the degree of tightness with which we held the cord attached to the machinery moving the hand on the dial; and, for the same reason, we have rarely seen two observers come to the same conclusion in any given case. We feel bound to add, that while practical experience has compelled us to distrust the stethometer altogether, the same test—the only one to be depended on in medicine—has led us to place but very little reliance on the spirometer of Mr. Hutchinson. The *fashion* of both is nearly over, and we rejoice at it, as we are inclined to think that their use has tended to diminish that careful and rigid application of auscultation and percussion, so absolutely essential, whether employed by the physician to discover the absence or presence of disease in the respiratory organs.

The third and last part of the work is, as already stated, devoted to observations on the treatment of consumption. In it we must confess that we are rather disappointed, although it may be not justly so; we expected, forsooth, that we should meet with some new means for preventing the development or checking the progress of the disease, if not for its cure; or perhaps be told of a novel appreciation of plans of treatment already known,—in either case derived from the author's experience in the splendid institution to which he has now been for some years attached. But after a careful perusal of what he has written, we cannot discover that we have gained any hints even to further our knowledge of the therapeutics of phthisis. Yet Dr. Cotton deserves credit in that his observations, more especially on this part of his subject, are well and clearly put, and are for the most part consonant with general experience, and therefore trustworthy. The first and second chapters are particularly good; in both of them, we may say, the prophylactic treatment of the disease is considered, the first being headed "Preventive Treatment," and the second "Treatment of phthisis before tubercle is deposited."

In the medical treatment of consumption, after the deposit of tubercle, Dr. Cotton considers that there are three objects to

be fulfilled—"(1) To restore the health and vigour of the body, (2) to relieve the different symptoms as they arise, and (3) to check the further progress of the local or pulmonary disease." These might, we think, be reduced to two, for the first and third demand the use of the same remedies, namely, tonics and stimulants, such as cod-liver oil, the preparations of iron and of iodine, mineral acids, vegetable bitters, &c., as enumerated by the author, for the first indication only. The third he appears to consider is fulfilled solely by counter-irritation, for it alone he notices under this division, mentioning, merely to condemn, other methods of *cure* once employed, but now almost universally discarded. It is well to let our readers hear what so strenuous an advocate for the use of local derivatives says for this plan of treatment.

"We have already noticed, not only that cutaneous diseases are seldom associated with phthisis, but that the union of the two, in the few cases where it does occur, very often mitigates the consumptive symptoms. The external use, therefore, of stimulating agents —which, in fact, produce, artificially, disease of the skin—seems to be suggested by nature herself, as a means both of arresting the deposition and checking the subsequent process of tubercular matter.

"Setons, issues, blisters, escharotics, and irritating liniments, have had their respective advocates; but although either of these may efficiently fulfil the object for which it is employed, the choice between them seems to me to be anything but unimportant. The seton is scarcely to be recommended, and the use even of issues is, in my estimation, questionable, since equal benefit may be attained by more simple means; and after either of them has been established, its discontinuance, although perhaps absolutely necessary, on account of the increasing debility of the patient, may of itself be productive of harm, owing to the cessation of the cutaneous discharge.

"The action of blisters being more easily controlled, limited and repeated vesication is an excellent mode of counter-irritation; but large and open blisters are undesirable, as they only distress and weaken the patient without being more effective than smaller ones. Blisters, however, are less adapted to those cases where the tubercular deposit is in a state of quiescence, than to those where there is morbid inflammatory action going on around it.

"In the generality of cases, nothing answers the purpose of counter-irritation so well as caustic and stimulating liniments; the eruption thus produced being easily regulated according to its effects. It is surprising, moreover, in how short a time this kind of eruptive irritation ceases to be troublesome; few persons are under the necessity of discontinuing it, whilst the majority cheerfully accustom themselves to its existence, finding how successfully it relieves many of their most urgent thoracic symptoms. In the whole treatment of phthisis nothing, I believe, surpasses in importance the

proper employment of such applications; but their full value is scarcely apparent until they have been persevered with for weeks or even months together. Of the caustic agents iodine is probably the best; it may be used in strong spirituous solution, either alone or combined with iodide of potassium, and applied as frequently as the state of the skin will permit. It is difficult to say whether the iodine acts *specifically*, or whether the benefit is wholly due to the common principle of counter-irritation; I must confess that I have employed it principally on account of its manageableness, with a hope, perhaps, but certainly not a *conviction*, of its *specific* action. Of stimulating applications it scarcely matters which is selected, so long as regard is had to the patient's convenience. Tartar emetic ointment, however, might almost be discarded, both from its unpleasant greasiness, and the soreness and annoyance of the pustules it occasions. Strong liniments of cantharides, turpentine, cajuput, ammonia, or croton oil, are far preferable; the latter is the most certain in its operation, and might, I think, supersede every other. It may be mixed with soap liniment in the proportion of from half a drachm to a drachm to the fluid ounce, and gently rubbed in at night until it produces a papular eruption; it may then be discontinued until the eruption begins to fade, when it may be re-applied; and by employing it in this way a papular *disease of the skin* can be kept up as long as may be thought desirable. It should be used with a glove or a piece of flannel, that the hand may not be inflamed; its action becomes now and then apparent at a part remote from that where it was originally applied, the head and face, for example, becoming swelled and inflamed; but from this no permanent harm can ensue, and in no other way is the liniment productive of the slightest ill effect, nor has it the least tendency to cause diarrhœa."

We have been anxious to lay these observations of Dr. Cotton before our readers, especially because our own experience is altogether opposed to the employment of counter-irritation in the treatment of consumption, even to relieve the *cough*, for which, under the second indication, the author recommends its use also. In the first place, we cannot see on what *rational* grounds the establishment of local inflammation on, or of a purulent discharge from, the surface of the chest could be expected to prevent the further deposit of tubercles in the lungs, or to promote the removal of those already deposited there, and the restoration to a healthy condition of the parts injured or destroyed by the results of their presence. And, in the second place, we know that the tubercular diathesis, on the existence of which this disease depends, is a sign of low vital power, and the effect of the employment of counter-irritants is still further debilitating. Moreover, the high nervous irritability usually so characteristic of phthisis is augmented by the pain and annoyance of local irritants; and the hectic symptoms,

which it is so important to recovery to keep in check, are, if not in the first instance sometimes developed, in all cases certainly increased thereby. For these reasons, amongst others, we have for several years back refrained from the use of counter-irritants in phthisis, and we think with much advantage to our patients. It is true that the occasional application of a blister will relieve the pains of the pleuritic inflammation attendant on the disease, but even these we have seen more effectually removed by the application of a few leeches—if the strength will bear the loss of blood, and, if not, by stupes, poultices, and epithems.

In the fourth chapter of this part, which is headed "Treatment of the Various Forms of Consumption," *acute phthisis* and *laryngeal phthisis* alone are referred to. In speaking of the treatment of the former, to which little more than a page is devoted, Dr. Cotton does not say anything of the advantages derivable from the inhalation of the steam of warm water impregnated with sedatives, such as belladonna and conium: from the use of the former we have seen excellent results; a drachm of the expressed juice of either may be added to a pint of hot water, and the steam arising therefrom inhaled twice or three times a day from an inhaler with a wide mouth-piece. With regard to the treatment of laryngeal phthisis, the author recants an opinion formerly expressed by him, and now speaks in the highest terms of the topical medication, by means of solution of nitrate of silver, as recommended by Dr. Horace Green, of New York, whose work we reviewed in the fourth volume of our present series,—which was the first notice of it, and of his novel practice, given to British and Irish physicians. Since then, Dr. Eben Watson, of Glasgow, has published the results of his experience of this local remedy in two valued papers in our pages[a]; we need not, therefore, dwell on the matter now.

In the fifth and last chapter Dr. Cotton gives "a more particular description of the chief agents employed in the treatment of consumption." The first of these which he considers is, *change of air and climate*, and on this point his observations are, for the most part, judicious; but we must protest against the following sweeping assertion,—"that it is unnecessary at any stage of consumption to seek a foreign residence, as England offers advantages equal to, and in many respects greater, than any other country." He bases this statement chiefly on the fact of the *ubiquity* of phthisis, the disease being equally as prevalent, if not more so, in those countries to which the

[a] Vols x. and xiv.

sufferers from it are usually sent. The fallacy of this argument, however, is so obvious, that we need not stop to discuss it here. In fact the author, a few pages further on, admits "the benefit which many phthisical invalids unquestionably obtain by a residence abroad," but asserts that it is attributable, in the early stages of consumption, "to the change of scene, association, and recreation, which accompany it," and, in the more advanced stages, "upon the extent to which exercise in a pure atmosphere can be safely practised." As regards the other therapeutical agents specially noticed, we cannot find that the author adds anything new to what was published some years ago, relative to their effects, in the First Report of the Hospital for Consumption, and which we reviewed in the ninth volume of our present series.

Dr. Burslem has been induced to give his volume to the profession, as we gather from his Preface, for two reasons,—to prove that the disease can be cured by the administration of emetics, and to show that in the female sex he "has found himself succed in arresting the first or dawning inroads of pulmonary consumption by directly attending to those apparently unimportant deviations in the periodical changes which occur in all healthy females." First, with reference to the cure of consumption by the continued employment of emetics, we must, as critical judges, pronounce our verdict,—that the author has not proved this case. The practice is, as all our readers know, but the revival of an old theory, or rather of a system of treatment which had long since been tried and found wanting. On the special emetic to be employed the author remarks as follows:—

"I first gave ipecacuan or zinc. On finding the depressing effects of the emetic continuing, in some cases, for many days, I stated to Mr. Twinberrow, chemist, of Edward-street, Portman-square, my wish to have some milder emetic, upon which he prepared several for me. Those that I now employ are, the essence of ipecacuan, and the essence of ipecacuan with chloric ether. Administering these preparations in the dose of about fifteen minims in a tea-spoonful of water, I directed the patient to drink some warm water; in about ten minutes, or a quarter of an hour after it was taken, vomiting took place, and, in general, it acted but once. . . . The emetics are generally repeated at first every third day; after a while every fourth, and then once a week."

Dr. Burslem's second indication of treatment is, we think, sufficiently well known and attended to by every judicious physician, and did not require the publication of a volume to

enforce its importance. It is, however, in our experience, an accompaniment of the disease which does not require any special interference beyond that requisite for the proper treatment of the disease itself.

From these few words, we think our readers can readily judge for themselves of the value of the second work placed at the head of this review, and how little its publication has done to advance our knowledge of "the most important disease human flesh is heir to."

A Treatise on Operative Ophthalmic Surgery. By H. Haynes Walton, F.R.C.S. Eng.; Surgeon to the Central London Ophthalmic Hospital; and Assistant Surgeon to St. Mary's Hospital. London: Churchill. 1853. 8vo, pp. 628.

The science of medicine and surgery, necessarily progressive, has made rapid advances within our own time, keeping pace, at least in some of its branches, with those astonishing discoveries and applications of knowledge which have in many respects so changed and improved the moral and physical aspects of the world. In the several departments of our science, there have arisen zealous and careful observers, whose labours and investigations, accurately determined by the research and experience of others, have become standards, and though many of them still admit of improvement in some of their details, they respectively possess the intrinsic value of being founded and built upon truth. Thus, surgery, based upon the evidences of anatomy and the facts of pathology, has become fixed in many of its principles; its practice is usually clear and definite; and its operations comparatively safe and successful. These improvements it certainly owes to the learning and untiring research of those great men who have shed a glorious lustre upon the medical profession, and who have recorded their experience to serve as inextinguishable beacons for all time. While these observations refer to surgery in general, they are especially applicable to its ophthalmic department, for long after medicine and surgery had made, in a general point of view, very great advances, several of their special departments were overlooked, or but very imperfectly understood. Among these none, perhaps, was at a lower ebb than an accurate knowledge of the diseases of the eye; indeed, up to nearly the opening of the present century, the empiric or itinerant practitioner alone intermeddled with its complaints, and it was the *mere* oculist, often as ignorant as unprincipled, who performed operations

upon that important organ. At length, however, there was demanded from the educated surgeon a degree of attention not formerly bestowed upon the eye, and the general principles of pathology and therapeutics were necessarily brought to bear upon the elucidation and treatment of its diseases.

The science having been thus wrested from the hands of mountebanks and quacks, soon exhibited signs of wholesome vitality; and both on the Continent of Europe and in this country, institutions for the treatment of eye diseases spread over the land, until, in all the metropolitan cities and in almost every large town, such charities are to be found; while ophthalmic medicine and surgery have been recognised as an essential ingredient in the education of the accomplished surgeon. And, indeed, it is much to be regretted that the study is not demanded from all, and that special teachers are not attached to our various medical schools, for the purpose of imparting that accurate and extensive information which it is impossible to convey in the general surgical course.

Since the beginning of the nineteenth century the literary contributions descriptive of the eye and its diseases have been numerous, and many of them very valuable; its pathology has been fully illustrated, at home and abroad; its anatomy accurately described; the medical treatment of its various affections precisely pointed out; and the several operations suitable to it explained and demonstrated. Among the various contributors British and Irish surgeons have borne a distinguished part, and their writings and researches shall remain lasting monuments of their diligence and literary labours. A reference to the preceding Numbers of this Journal will show that many of these contributions to ophthalmic science have been reviewed in its pages, and that the claims of this important branch of medicine have been steadily kept in view.

We have now to introduce to the notice of our readers the latest addition to ophthalmology, in the form of "A Treatise on Operative Ophthalmic Surgery," from the pen of a London surgeon, Mr. Haynes Walton, who, although in his preface he modestly styles himself "an untried writer," is not unknown to the readers of the periodical medical publications of the day, as the author of some excellent papers upon various surgical subjects. He now comes before the profession in a goodly sized octavo, and claims their suffrages in favour of his book, regarding which he says:—"I have spared no pains in my attempt to make it of practical value, and I have laid under contribution all the literature that has come within my reach or knowledge, whether English or foreign, on the subject of oph-

thalmic pathology and surgery." A perusal of his work will certainly prove this statement; and, so far as we are enabled to judge, he has fairly availed himself of the labours of preceding authors, giving their views concisely, and honestly acknowledging the debt.

The book before us opens with an elaborate history of ophthalmic surgery, from a very distant period of antiquity down to nearly our own times; and this interesting sketch concludes with "the hope, that the slight notices which I have found it possible to exhibit within so narrow a compass will inspire the reader with the desire to extend his knowledge of those treasures of the history of our art, which the fashion of our age so systematically teaches surgeons to neglect." This observation is but too true, and the fact of this ignorance is one reason why so many writers plume themselves upon certain new discoveries, which, were they better acquainted with the history of our art, they would learn were known long before. With the final sentiment of this introductory chapter all will agree, and it coincides with the observations we have already made:

> "It will at least," says our author, "be acknowledged, that in the department of ophthalmic surgery the men of to-day have no reason to be ashamed of being compared with those of the olden times. The multiplication of ophthalmic institutions in this century, during which they took their origin, distinctly shows the increased attention of modern surgeons to ophthalmic surgery; and their superior skill in this branch of the curative art may be safely inferred from their vastly increased opportunities of observation and experience."

The second chapter is devoted to the consideration of "the use of chloroform in ophthalmic surgery." Mr. Walton does not add anything new upon a subject now well tested and pretty extensively known. He is an advocate for the exhibition of that most useful drug in all operations about the eyes, save "in extraction of cataract, or where the cornea is incised to an equal extent" as in that operation. We cordially coincide with that view, and certainly would advise the administration of chloroform in all cases of operation, save those just excepted and also in the operation for strabismus in the adult, unless when we have to deal with a very excitable, timid, or sensitive patient. We lately had an excellent example of the efficacy of chloroform in permitting an operation which, without its use, seemed impracticable: the patient, a most irresolute, irritable person, had some calcareous deposit upon the capsule of the lens, particles of which had become detached and lay in the anterior

chamber, in the angle between the iris and cornea, causing intolerable and incessant pain. Removal of the foreign body was imperative; the attempt was made, but, from the patient's resistance, it failed. A few days after, while the patient was fully under the influence of chloroform, not only were these particles easily extracted, but other calcareous portions were removed from the posterior chamber, the eye remaining insensible, fixed and steady during the proceeding. In children, in the operation for squint, it is invaluable, and although its use debars us from immediately knowing if the eye be rendered straight, still that is a small drawback, when compared with the comparative ease with which the operation can be performed while the little patient is insensible to pain; and moreover, it is very easy to re-induce the anæsthetic impression, and remedy any defect, if we find that the eye does not come straight soon after the patient recovers from the influence of the chloroform. We have operated on very many children for squint when insensibility was thus produced, and we have never had any difficulty in completing the operation at what we may term the "first sitting." The following observations are much to the point:

"It is scarcely possible to overrate the value of a discovery which tranquillizes the mind of the patient by banishing the anticipation of pain, deadens the sensibility, and prevents the reality of suffering; while to the operator it brings the inestimable advantage of quieting the struggles of children or of irresolute adults, which are apt to frustrate all the care, foresight, and dexterity, that the most assiduous application to practical surgery can command."

"Chloroform," he again says, "may be administered to persons of all ages, from a few months' or weeks' old to extreme age. I have given it several times at six weeks, and once at a month old; and a medical friend reports that he has kept a child of ten weeks' old under its influence for more than half an hour, without any unpleasant result whatever."

Our experience fully confirms these statements. We lately had a child, four months old, requiring amputation of both limbs, kept under the influence of chloroform for more than an hour; the little sufferer, instead of being injured, was enabled to tolerate a shock which otherwise would likely have proved immediately fatal. We have also, without the smallest evil result, ligatured a large nævus in the upper lip of an infant three weeks old, while under that agent.

The third chapter relates to "Ophthalmic instruments in general," and some excellent observations are introduced relative to those necessary implements. We are glad to perceive that Mr. Walton is not an advocate for the almost endless variety of the ophthalmic *armentarium;* we are satisfied that a

good surgeon can operate well, even with ordinary instruments, and it is only the man that has not experience, dexterity, and confidence in himself who requires those several inventions which enrich the instrument makers, but add very little to the effectiveness of surgical operations. While we say so much, we do not wish it to be inferred that the surgeon should be careless about his instruments; on the contrary, we hold that he should be most particular to see that they are well adapted for their intended use, and that they are in as fine order as the cutler can make them.

For Mr. Walton's excellent remarks and advice regarding the kind and choice of instruments in ophthalmic practice, we must refer the reader to the work itself, where, throughout the book, he will not only find most useful hints, but see the instruments figured of their exact size.

The chapter on injuries from mechanical or chemical agents we may dismiss in a few words; for although it contains excellent suggestions, there is nothing novel in the views expressed, and little which demands special notice. There is one observation, however, with which our experience leads us to differ. The author seems to doubt the efficacy of counter-irritation in *all* ophthalmic diseases; had he intended to convey that in ophthalmitis—the subject under consideration—running on to suppuration of the globe, such applications are useless,—we would have subscribed to the doctrine; but when he says that "I have not been able to satisfy myself of the efficacy of blisters in ophthalmic diseases," &c., we must say that surely he has not given them a fair trial in the treatment of the affection which has been denominated *strumous ophthalmia*, one marked symptom of which is the great intolerance of light and lachrymation which exist, and which we have found almost invariably to be relieved by the application of a large blister to the nape of the neck. We advise him to try this remedy, and have no doubt he will change his sentiments, not, however, if he follows what appears "is the fashion at present in the metropolis, to prescribe blisters not larger than half an inch in diameter"!

We come now to examine Mr. Walton's opinion regarding the affections of the eyelids named trichiasis and entropium, those morbid changes of the lids which have given rise to such opposite opinions among surgeons with respect to the cause and remedy of the defects. In the first place, our author's definition of trichiasis is as follows:—

"Trichiasis signifies that misdirection of the cilia or eyelashes whereby their natural position is changed, and they are turned towards the globe of the eye, and touch or rest on it more or less;

thus, practically, the term is not applicable until the mal-direction has arrived at that state, and occasions some injury." And again: "Trichiasis varies in a degree from a slight deflection of some of the cilia, just sufficient to touch the globe, in one or more parts of the the lid, to the inveterate implication of all of them, except the smaller ones at the corners of the lids, which are usually exempt."

He then discusses the theory of the supposed production of an extra set or superabundant growth of cilia in this affection, or what is styled distichiasis, and arrives at the conclusion, with which we agree, that there is no fact which supports the "secondary creative theory."

"The supposed independent, or new row, is a mere deception, arising partly from the irregular though natural manner in which the cilia are placed at the edges of the lid, owing to the different planes in which their follicles lie—a fact which seems to be frequently overlooked, although noticed by the earlier anatomists,—and partly from the isolated position of those which are most internal when their extremities are turned in, or inverted from their fellows that are set more externally on the lid."

It has always appeared to us surprising that any one could imagine this extraordinary growth, how it could be, or why it should be produced. We have examined a very large number of persons affected with the disease under consideration, and could not, in any case, discover the extra number of cilia, comparing the diseased with a sound eye *in the same person*, the only possible way, we maintain, by which a fair and correct opinion can be formed; for it is obvious that if we were to compare the number of cilia to be found in the lids of one suffering from the complaint, with those in sound eyelids in another person, we would be proceeding upon very irregular principles, were we to found any argument upon such data. Let us now hear Mr. Walton's explanation of the cause of the inversion of the cilia as it constitutes the affection named trichiasis or distichiasis.

"The inversion may be but a permanent state of an accidental distortion of the cilia by some mechanical means, without any diseased condition of them whatever, of which entropium may be mentioned as an example; or the matting together of the cilia in long-continued purulent discharges from the conjunctiva, and the attendant misdirection of them is another mechanical cause,—although here it cannot always be certain that the cilia bulbs are not rendered unhealthy.

"As an idiopathic affection it is due to certain pathological changes in the lid itself, nearly all of which arise from strumous inflammation. It may not be too arbitrary to speak of idiopathic

trichiasis as occurring in two forms: in the one as a disarrangement of the lashes; in the other, disarrangement, together with imperfect development.

"I believe that the first—that is disarrangement—nearly always takes its origin in unhealthy changes in the fibro-cellular tissue in which the cilia follicles lie. There would seem to be an exception to this rule in cases where a few cilia, though emerging correctly from the lid, touch the globe, from having acquired an unnatural curvature. Thickening or other apparent disease of the lid is not a necessary accompaniment, but when the disarrangement of the cilia is very great, there is a display of it."

We very much question whether, in any case, independent of mechanical injury to the lid, or of simple entropium, even a single cilium becomes inverted, without a previous change in the hair-follicles, or the fibro-cellular tissue in which it is placed, or the margin of the cartilage upon which it rests. The history and a close examination of several cases of the simplest kind, have proved this to our satisfaction, and we have invariably found sufficient evidence of the fact; therefore we believe that all cases of trichiasis, irrespective of the exceptions we have mentioned, arise from inflammation, condensation, and consequent contraction of the tissues around the cilia, and hence we see the different mal-directions which the lashes take, some curved outwards, others turned inwards upon the globe of the eye.

With regard to the method, or methods, of cure by operation advised by Mr. Walton, we perceive that the principles are the same as those of many other surgeons, though he differs essentially in carrying them out; for instance, in cases where the cilia are merely slightly inverted, and where they are in other respects natural, it is the practice to excise an elliptical piece of the integument sufficient to evert the edge of the tarsus slightly, so as to free the globe from the inverted cilia, the skin being removed from the loose portion of the lid about an eighth, or quarter of an inch from its margin. Now the operation which Mr. Walton practises in this simple class of the disease is, to make his first incision close to the edge of the tarsus in its full length; this is joined by another curved incision, which includes the amount of integument that may be deemed sufficient, and this portion is dissected off "without interfering with the subjacent muscle;" the edges of the wound are then united by points of suture, and left to heal by the first intention. Since Mr. Walton's paper upon this subject appeared in the Medical Times, we have practised this operation in several cases, and we can speak most favourably of the result. However, we always dissect off the muscular fibres along with the

integument, and thus, we think, make a more effectual and permanent cure; indeed we cannot see on what principle the "subjacent muscle" is not interfered with; for if, as we believe, the strong muscular fibres,—*musculus ciliaris*,—situated on and near the margin of the tarsal cartilage, exercise a great influence in causing inversion of the lids, then they should surely be removed to prevent that result, as it is probable that, in every case of trichiasis affecting the entire margin of the lid, there exists such a tendency? In cases where there is partial inversion, that is, where a few, or a small bunch of cilia turn in, Mr. Walton recommends the offending cilia to be removed as follows: after the lid has been secured as he directs, he says:—

"An incision is then to be made on either side of the bunch to be taken away, long enough to reach beyond their follicles and through the skin and orbicular muscle, and a third transversely, at the very edge of the lid, falling in with the two vertical ones. The little flap is raised and intrusted to the care of an assistant, who keeps it turned up with an instrument or his finger, at the same time treating it with delicacy; directly the bleeding is checked, the mass of follicles, with the investing tissue, should be carefully hooked with the tenaculum forceps, and dissected out. The flap is then restored, and retained by three sutures, one on each edge."

We have not tried this method; we have hitherto adopted the plan recommended by Mr. Wilde, namely, that of cutting down to the follicles of the offending cilia, applying nitrate of silver to them, and then extracting the lashes with a forceps. This latter we have found very effectual, and it has the advantage of being more easily and rapidly performed. Of the more aggravated cases of trichiasis Mr. Walton speaks as follows:—

"The entire excision of the cilia is called for when there is inversion of the hairs in more than one place; when one partial excision would be insufficient; or when there is inversion to a considerable extent. The indications are to remove the cilia with as little damage as possible to the tarsal cartilage, and to leave the punctum lachrymale untouched."

Regarding the steps of the operation, he says,—the eyelids having been fixed as he directs:

"Supposing the eye to be the right, an incision is made through the skin and the muscle, at about the eighth of an inch beyond the margin of the lid, from opposite the most external cilia, at the outer angle, nearly to the punctum; the inner end is then to be held with forceps made tense, and the skin, muscle, and cilia dissected off in a vertical direction." And again:—"The edge of the cartilage and

that of the skin are brought together with accuracy by a few sutures."

This plan does not differ very materially, save in the manipulation, from that recommended by Mr. Wilde, in his paper on "Entropium and Trichiasis," which appeared in the March Number of this Journal for 1844, yet we regard it as a still greater improvement; Mr. Walton, however, further on, gives another method by which the cilia may be removed, and although we have not had an opportunity of trying the operation recommended, we are disposed to think favourably of it. The author says:

"I have lately practised an operation which I consider an improvement on this, the most usual method—that just detailed; since it saves the skin, and preserves the natural appearance of the edge of the lid. Three incisions are made,—one at each corner, and one close along the margin of the lid; the flap of skin is then raised and held back, the cilia dissected off, and a few sutures applied. It requires great caution not to allow some of the cilia to escape; and unless the tenaculum forceps are used, and the sponge is nicely employed by the assistant, so that the operator may clearly see the several steps of his course, some lashes are likely to be left behind."

The latter observations are, practically, very correct, as, in all operations for the removal of the cilia, it is most difficult to eradicate thoroughly the whole of the hair-bulbs, and, unless that be done, the object of the operation cannot be attained.

We shall now offer some remarks upon Mr. Walton's views respecting Entropium, an affection the pathology and cure of which have caused, as we have already stated, no small controversy amongst ophthalmic writers. In the several views entertained by different authors, we believe a great deal of truth may be found regarding the pathology of this disease, however much they may differ from each other. Under this impression we may be permitted to refer to some of these seemingly opposing doctrines. Putting aside the absurdities of looseness of the skin covering the lids, or a morbid attachment of the integument to the orbicular muscle as exciting causes of inversion; we may mention that the doctrines of diseased curving or shrinking of the tarsal cartilages, contraction of the conjunctiva lining the lids, and irregular muscular action, have each had ingenious advocates; and if we take a case of entropium of pretty long standing, there will not usually be any difficulty in discovering all these conditions. Therefore, one observer may suppose that the alteration in the cartilage was the first morbid change; another, seeing the palpebral portion of the conjunctiva thickened and

somewhat contracted, will consider it to have been primarily in fault; while a third, recollecting the action of the orbicularis muscle, will lay to the charge of its mal-action the entropium which exists. Thus there are really elements of truth in all these opinions; but then the proper question is, which of these changes is the primary one? We incline to the belief that conjunctival inflammation, without any material, certainly no permanent, change in that structure, calls, in certain cases,—likely where the musculus ciliaris is largely developed,—inordinate muscular action into play. Thus the margin of the tarsus becomes inverted, and a continuance of that inversion will soon produce the changes in the palpebral conjunctiva and tarsal cartilage which, by some observers, have been, individually, considered as the original morbid change. We are led to the foregoing conclusion from having frequently seen inversion of the lower lid follow slight inflammation of the eye, after the needle operation for cataract in old persons, the mal-direction of the lid invariably disappearing as soon as the inflammation was removed; and we have satisfied ourselves of the existence, in many persons, of this great development of the marginal fibres of the orbicularis palpebrarum,—those fibres implanted close upon the edge of the tarsal cartilages. We therefore agree with Mr. Walton in his pathological views of the affection, and hence have been led to adopt his operation in preference to any hitherto advised. As to the method of operating, we had better quote the author's words. He says: "Let us suppose that the right eye is to be rectified"—and here he is speaking of the operation on the upper lid—"an assistant stands behind the patient, and having made the lid tense, by drawing it outwards and raising the brow, the surgeon should make two incisions through the skin and muscle," as indicated. We may say, that the diagram shows one incision close to the margin of the lid, parallel to its edge and along its whole extent, and another curved, its centre being about a quarter of an inch up on the lid and united to the first at its ends. Then he goes on to say: "The flap thus isolated should be forcibly drawn forwards and slowly dissected, by vertical strokes of the knife, from the one side to the other, and not taken away by horizontal strokes, or else the muscular portion will not be effectually removed." And again: "Three or four sutures should be used."

This operation, which we believe to be applicable to and effective in almost every case of entropium, is founded on the pathological condition and the anatomical relations Mr. Walton points out, and has certainly a very great advantage over the old, frightful cutting up of the lid, which was formerly so

much practised. We have dwelt at some length on this subject, in consideration of its importance; and although we may differ from Mr. Walton in some of his views, we are satisfied that, in the main, his opinions are correct; and consider the entire chapter on affections of the eyelids sound and practical.

We now pass on to the chapter on strabismus or squint. In the historical notice of that operation, Mr. Walton tells us what we are sure is not generally known, namely, that an English surgeon named Taylor performed operations for squint, successfully, "more than a hundred years ago." It has usually been supposed that Dieffenbach was the first to do so; and true it is that he was the first to bring the operation, as successful, before the public; yet it is interesting to know that, more than a century since, a countryman of our own was aware of the result, and practised the operation: however, as he was a charlatan, he kept the matter, or "miracle" as it was called, secret, which doubtless attracted but little notice, and was shortly forgotten. Soon after Dieffenbach's success was known, the operation caused quite a *furore;* and all kinds of operators were at work on every conceivable kind of squint—whether likely or not to be benefited by the attempt. This soon brought the operation into disrepute, and engendered that doubt of its utility, which, even to this day, clouds the judgment of some surgeons. However, there cannot be a question but that every man of experience in ophthalmic practice—unless prejudice has caused him to abandon the proceeding—must be fully satisfied with the benefits it confers, when the operation is properly performed, and in a proper case. In our hands it has been perfectly and permanently successful in many hundreds of cases; and we may say that the permanency of the cure—the point about which persons are sceptical—is judged of from cases operated on many years since, and where the eyes still remain quite straight. Of the operation, Mr. Walton says:—

> "It may be said that it is *singularly* successful, equalling in its permanent effects that of any other operation, and surpassing most of those which are practised for the removal of deformity."

We shall not say more, under this head, than that the chapter on squint contains much practical information on what is still an interesting subject, and is worthy of an attentive perusal by the surgeon who wishes to learn the most recent investigations in connexion with it.

Of the operations for removal of opacities of the cornea, spoken of in the sixteenth chapter, we can say but little. Mr.

Bowman's case, related by Mr. Walton, certainly gives great hopes that in cases of opacity from earthy deposit on the corneal structure, an operative proceeding may be followed by very beneficial results to the patient. We believe that opacity from loss of substance rarely ensues, unless the ulcer, for instance, penetrates into the lamellated portion of the cornea, for we have, over and over again, seen the anterior elastic lamina pretty deeply ulcerated, yet the part has healed up with transparent matter, leaving no trace beyond the little dimple or indentation which marked the spot formerly diseased; but when the lamellated structure has been implicated in the ulceration, it has always seemed to us that, in the reparative process, the organized lymph soon became opaque, and left that indelible mark so often met with in persons who have suffered from severe purulent ophthalmia. In such cases, we presume, any attempt at paring off the opacity must prove fruitless; but when a deposit, as of calcareous matter, takes place in, or rather on, the anterior elastic lamina, we believe, from the reasons we have given, that the opacity may be pared off, and that the reparative process will leave the cornea transparent.

Of deposits of lymph, without any loss of substance, in the structure of the cornea, we are of opinion, with Mr. Walton, that they will often disappear, partly or entirely, by the natural action of absorption, and, of course, think that they do not admit of any operative proceeding.

The seventeenth chapter, which extends to nearly one hundred pages, is occupied by the consideration of cataract, and the operations suited to the several kinds of that most interesting of all the affections of the eye. Mr. Walton enters very fully, and, in some points, even minutely, into the question, when discussing the several views relative to this important topic, and he proves that he is not only well acquainted with the existing literature on the subject, but has himself had great experience of the disease, and has fully profited by his opportunities. Some of his opinions and suggestions we shall take the liberty of quoting, as they accord with our own sentiments, and are eminently practical. With reference to any operation for the cure of cataract, he says:—

"It is a cardinal point in ophthalmic surgery not to operate on an eye for removal of cataract, so long as it may be rendered available for ordinary purposes, whether by optical appliances or by dilatation of the pupil with belladonna. The advantage from temporarily widening the pupil is remarkable, and not less available when there is slight yet general opacity, than when the opacity is partial but denser; and that, whether the lens or capsule, or both, be involved."

He mentions instances where this dilatation was kept up, in cases of stationary cataract, for a series of years, with satisfactory results. He recommends the neutral salt of belladonna—sulphate of atropia, as the best preparation for dilating the pupil, and advises it to be used either in solution of three or four grains of the salt to an ounce of water, which is to be dropped on the conjunctiva, or in the form of an ointment made by adding one grain of the atropia to a drachm of lard or glycerine, to be rubbed upon the brows.

After enumerating the several operations, usually practised in the various kinds of cataract, and evidently leaning to extraction in every case of hard lenticular cataract, when it is at all practicable, he says:—

"The greater degree of manual dexterity demanded for this operation—extraction—than for that of displacement, which is very much easier, has induced many surgeons to assign to extraction a secondary place; but I cannot allow that such a standard should regulate the decision. Cataract is not a disease of emergency in which one is suddenly called on to operate: and I hold it to be the imperative duty of every surgeon who undertakes the practical surgery of the eye, to qualify himself for the efficient execution of those operations that are the most certain, and confer the most lasting benefits."

These are honourable sentiments that should actuate every surgeon, and their truth cannot be disputed. No man is justified in undertaking operations upon the eye, unless he has dexterity enough to perform whatever operation may be most suitable to the individual case; and when we hear any one boasting of the wonderful success that has attended in his hands the comparatively easy operation of displacement, and extolling it beyond extraction in all cases, we have always a quiet belief that such a one has no hands for any other operation. The following remarks on extraction are judicious:—

"Extraction is frequently referred to as one of the most difficult operations in surgery. While I fully admit that, for it, accurate execution, great nicety, and tact are needed (and these are within the reach of most surgeons), I do not hesitate to assert that its difficulties are greatly exaggerated.

"Putting aside those whose total want of manual tact, or great nervousness, disqualifies them for any manipulations in operative surgery, requiring delicacy,—I believe that, with proper training and practice on the dead body, any surgeon may become a successful operator. Of course there have been, and ever will be, degrees of excellence, owing to the differences of natural aptitude, and of dexterity acquired by diligent study and practice."

With the sentiment regarding the pupil we do not agree, as we have often seen the iris, when the pupil had been dilated before the operation by extraction, become engaged in the section after its completion, thus causing a displaced and less useful pupil. Mr. Walton thinks it of no consequence whether it is or is not dilated; we think it should never be dilated, and we believe we have the weight of authority and experience on our side.

The following succinct but forcible remarks are of practical value:—

"Whether a patient be sitting or lying down during the operation is of no particular moment, if he be quiet; but if likely to be restless, he ought to be placed upon his back.

"The importance of a properly regulated light is evident, and an operator will, of course, choose that which, according to the arrangement of the room, suits him best.

"It is customary to bind up the eye not to be operated on, if it have any sight; I object to the practice, because it possesses no advantage, and the formality tends to unnerve the patient.

"It is well to have all the principal articles of clothing taken off, the patient prepared to go to bed, and a morning gown put on, to prevent the inconvenience of undressing after the operation.

"I am in the habit of dividing the cornea in the upper part, preferring that section, as it possesses some advantages over the lower, such as the greater certainty in making it effectually, and the less likelihood of the flap being interfered with by the lid."

He stands behind the patient in making any section, and thus he has the advantage of being able to secure the eye himself, and a very great advantage it is, as no assistant can possibly act consentaneously with the surgeon. Of course, if the surgeon be not ambidexter, he cannot operate, as Mr. Walton advises, on the left eye, but has to stand in front of his patient, and leave the upper lid and the securing the eye to an assistant; and, as the operation may thus be very readily marred, it is the duty of every ophthalmic surgeon to endeavour to make a *dexterous* left hand, by constantly practising it.

In speaking of the operation for solution, the author pays a very just tribute to Dr. Jacob:

"There is not," says he, "perhaps any surgeon living who has paid so much attention to needle operations as Dr. Jacob, of Dublin."

And again:

"Dr. Jacob has achieved great celebrity by his operation with his peculiar needle, and he operates by solution in many cases in which most surgeons would extract; yet, in justice to this talented

man, who has contributed so largely to our knowledge of the structure of the eye, and the treatment of its diseases, I must not allow it to be supposed that he would use his needle in every case; he assigns to extraction a place, restricting its performance to hard cataract in aged persons, and stating that under fifty years of age, the crystalline lens once broken in pieces, must be sooner or later dissolved and absorbed, there being no question as to result, but only as to time."

Indeed, in the following extract from the Preface, Mr. Walton expresses his high opinion of our Irish oculists, and we feel gratified to know that a London surgeon is so well acquainted with the surgical literature of this country, and has the justice, not always exhibited, to render marked honour to those who have indisputable claims to distinction:

"No one who is at all acquainted with ophthalmic surgery is ignorant of the immense value of the profoundly scientific and eminently practical researches of Dr. Jacob, of Dublin: his writings I have studied with care.

"To Mr. Wilde, of Dublin, I must also pay my tribute of thanks and admiration; and no less to my friend Mr. Browne, of Belfast, who has greatly assisted me by many important suggestions."

Mr. Walton advocates the anterior operation for solution, and insists upon the necessity for as little disturbance of the lens as possible. This is practically correct, and, if the operation be performed as he directs, there is scarcely a chance of acute inflammation following the use of the needle.

In speaking of the sickness at stomach and vomiting that frequently result from the operation for solution, he seems to depend upon opium for quieting the disturbance. We have always found that the irritability has been speedily overcome by exhibiting drachm doses of the tincture of hyoscyamus, with thirty drops of cherry laurel water; or, in lieu of this latter, three drops of Scheele's Prussic acid, repeated every four hours until the vomiting has ceased, and we do not remember any case in which more than three or four doses were required. At the same time we either foment the eye with warm water or apply a cold lotion, in either case keeping belladonna constantly on the brows.

The five remaining chapters are taken up with the consideration of "entozoa within the eyeball," "artificial eyes," "malignant affections," "artificial pupil," and "extirpation of the eye." Upon the various practical questions ably discussed in these chapters we shall not enter; we shall only cursorily refer to the subject of artificial pupil. The operation by "incision" has certainly been greatly improved in the author's hands: the

breadth and shape of the knife he uses, and the manner in which he operates, give every chance, in suitable cases, for a successful result. His own opinion is expressed in the following terms:

"The great advantages of the operation I advocate are,—its being executed through the cornea, the certainty of being able to make the pupil at the desired spot, and the division of the iris before the aqueous humour is lost; and therefore, while it is tense, by an incision which, owing to the form of the knife, is effected with such slight pressure, that there is no risk of detachment from its natural connexions."

And again:

"To render 'incision' with the knife more generally applicable, by adapting it to cases in which the iris has not sufficient tone to contract when merely excised, I proposed, some years ago, a modification of the above operation,—namely, to divide the iris a little internal to its centre, and with a blunt hook to draw outwards the outer flap of the wound till a sufficient gap is made. An aperture is thus effected, partly by tearing, partly by stretching, and by the folding inwards of the flap of the iris. This may be denominated 'incision with extension.'"

Of course he does full justice to the various other operations still practised for the formation of artificial pupil under the many circumstances in which closure of the pupil or opacity of the cornea may be presented, and for which any operative proceedings can be undertaken.

We must now draw our review of this "Treatise on Operative Ophthalmic Surgery" to a close; we have carefully examined the book, and can consistently say that it is eminently a practical work, evincing, in its author, great research, a thorough knowledge of his subject, and an accurate and most observing mind. To the student who is anxious to know the most recent improvements in ophthalmic surgery, we can safely recommend the "Treatise," which not only gives ample information, so far as words can convey it, but also clearly illustrates, by means of admirable wood-cuts, almost every condition of the eye that may require any operation, the various improved instruments the author uses, and the steps of many of the delicate operations which are recommended and described. The illustrations, 169 in number, by Bagg, are beautiful specimens of his art,—in fact, we have seen nothing in wood engraving, explanatory of the ophthalmic department of surgery, which comes near them for accuracy of delineation or natural effect. There is one blot, however, we observed, which, although

of no practical moment, is an *artistic* defect, namely, that, in several of the cuts, the hairs of the supercilium are directed the wrong way.

Of the work, then, as a whole, we can pronounce most favourably; there are certain minor points with which we might find fault, were we so inclined: but as these may, in a great measure, be improved in a second edition, which we are confident will soon be required, we content ourselves with directing the author's notice to them, and conclude by wishing him and his literary offspring every possible success.

A Treatise on Tuberculosis, the Constitutional Origin of Consumption and Scrofula. By Henry Ancell, late Surgeon to the Western General Dispensary, &c. 8vo, pp. 779. London: Longmans, 1852.

In the present day it cannot be doubted, that the reign of humoral pathology has, notwithstanding the almost exclusive devotion of pathologists to the study of the solids for the last century and a half, latterly acquired new vigour, and also that it seems destined to overturn its hitherto formidable rival. This change, however, we must admit, has been effected by the chemists and medical observers of the last few years; for although the humoral theory had been always recognised prior to the era of morbid anatomy, it had nothing for its foundation but the rude and equivocal observations of ignorance, and the vague and uncertain analogies and hypotheses of imagination or prejudice. The very ardour with which pathologists investigated the changes observable in the solids seems to have been a special cause of the revival alluded to. Special pathology had been almost exhausted. The extraordinary labours of British, French, and German anatomists had cultivated to the utmost this particular field, and hence, independently of other inducements, must have suggested to recent observers the desirability of opening up new paths in the domain of medicine. Of those who have thrown themselves into this new enterprise, our author may fairly claim to be one of the most painstaking, devoted, and successful pioneers.

About twelve years ago, Mr. Ancell published a course of lectures on the "Physiology and Pathology of the Blood," a subject at the time scarcely known to science. The microscopic observations of the cell-theorists then promulgated, taken in connexion with the chemical researches of Professor Liebig, confirmed the opinion of the primary pathological importance

of the blood, shed a new light over theoretic medicine, and rendered necessary a revision of medical doctrines. The original intention of the author was to have considered the pathology of blood-diseases generally, but we think he has wisely restricted himself to a single one, inasmuch as, if the case be well proven in a single instance, it will best facilitate the accomplishment of his original aim. The selection is also opportune, as no work in any language has hitherto regarded tuberculosis, or the primary disorder of the blood, as the proximate and essential object of theory and practice, or embraced its complete history.

"I have endeavoured," he says in his Preface, "to collect all the most important facts relating to the physical and chemical properties of the blood, the aberrations observed in the phenomena of cell-growth and nutrition, the histology of tubercular deposits, and the special pathological anatomy of the tissues and organs and have referred them to the primary affection as sequences or results. . . I have ventured to discard the idea of the predisposition being a simple proclivity to disease; and have referred all its phenomena to the disease already existing in the blood. . . . I have more especially endeavoured to discriminate between the causes of the disease of the blood, and the causes of the local disease, a distinction, as I think, of the utmost importance, yet hitherto little regarded and often overlooked."

As respects the leading principle, our author solicits the reflecting practitioner—

"To consider the entire body of facts brought forward in support of it as the development of one great question,—Is tuberculosis herein regarded consistently with the laws of organization and the physiology of man, and the nearest approach we can at present make to a knowledge of its true nature?"

With regard to the manner of treating this important and extensive subject, Mr. Ancell modestly lays claim to few pretensions. He has collected a monster host of separate facts, culled from the best authorities; he has added to these his own observations and researches; he has arranged the whole as radii around the central principle to which he, for the first time, has awarded the most important place; and if it will not tend to revolutionize theoretic medicine, there can be no question that it must conduce to a more comprehensive view of medical phenomena; it must point the way to a more perfect system,—one worthy of advancing science and the cause of human amelioration.

The contents of this work are briefly as follows: Chap. I. The nature of the tuberculous predisposition, as evidenced by

the changes of the blood and fluids, and the structural and functional characteristics. Chap. II. The signs and symptoms of tuberculosis. Chap. III. The physical and chemical characters of tubercle. Chap. IV. The morbid anatomy. Chap. V. The etiology. Chap. VI. The pathology and the theories thereon in different ages of the world. Chap. VII. A *resumè* of the forms and varieties of the disease. And Chap. VIII. The treatment.

In addition to the numerous minor suggestions, reflections, and original observations of our author, to which we shall afterwards refer while accompanying him through the different divisions of his Treatise, there are some principal points characteristic of the work, which we shall, as a preliminary, discuss.

First. Our author considers tuberculosis as an idiopathic blood disease.

Secondly. The disease is due to a primary error or defect in the blood-making process. Its so-called causes induce some unknown change in a portion of the proteiniform principle of recently formed liquor sanguinis, which deteriorates its properties, and renders it unsuitable as a material for organization. At the same time, the only principle of nutrition circulating with a diminished number of red corpuscles is in part converted into a fatty substance of a lower degree of oxidation. These principles are exuded in the blastema, and are either employed in the assimilating processes, deranging the nutrition of many of the organic structures, and giving the tuberculous or scrofulous character to various pathological processes, or in the more advanced stage of the morbid process they are deposited in particular tissues, and accumulate generally in the form of tubercle; but sometimes both as tubercle and morbid fat.

Thirdly. The disease of the blood which leads to the deposit of tubercle, and that which gives the specific character to scrofulous affections, are essentially the same.

Fourthly (Corollary). Whatever method of cure we may find available for local disease can prove of little benefit if the diseased condition of the blood be allowed to continue; whereas, if we can alter the state of the blood, the local disease not being too far advanced, may get well spontaneously.

1. That the blood is the seat of the disease may, indeed, be considered the burden of the volume. Its physical and chemical properties, and even its microscopic appearances, are elaborately detailed in evidence therein. The structural and functional characteristics of the disease show that every organ and tissue are engaged; while the signs and symptoms combine to prove its general nature. The causes, especially the fact of its

hereditary transmission, the morbid anatomy, and even the most successful mode of treatment, jointly contribute to substantiate this view. Indeed there cannot be a doubt upon the mind of any reflecting practitioner, that the blood is essentially engaged in the formation of tubercle. But our author goes further than this. For though there may be no local manifestations, not a particle of tubercular matter deposited in any organ or tissue, though the blood, lymph, or chyle, may be searched in vain for the characteristic matter, yet to the eyes of our author the tuberculosis taint is plainly manifested a long time, even a whole generation, before it becomes exemplified to the ordinary senses. He has satisfied himself that, in the advanced stages of the disease, tuberculous blood only differs from that in the earlier stages by peculiarities dependent on local complications alone. "The predisposition differs from the general disease only in degree, and the condition of the blood in the predisposition is the same, differing also only in degree." The condition of the blood in the tuberculous constitution, prior to the evidence of local disease, is, however, purely an inference, though we admit a legitimate one, as most of the chemical facts adduced pertain to the latter condition. It is certainly shown, as the combined result of the experiments brought forward, that there are certain constant characters in the blood of confirmed tuberculosis, which characters decidedly indicate a low degree of vitality. Notwithstanding these deviations from the healthy standard, may they not occur in individuals enjoying comparative health, but of a tuberculous habit? This difficulty, however, is got rid of by the assumption, that at the period when the foundation of the tuberculous habit was laid, the blood, or its embryotic analogue, must have been in a greater or less degree tuberculous.

Here, then, we may have two specimens of tuberculous blood,—the one presenting the characters of the fluid as it appears in advanced tuberculosis, which characters are tangible and fully defined, and the other presenting no appreciable deviation from the standard of health. Chemistry and the balance here fail; and we are thrown back upon analogical reasoning in order to escape from the difficulty. The tubercular matter which we meet with in phthisis or scrofula, we can physically examine to the most elaborate extent. We see that it has qualities peculiarly its own, and that it is inorganizable. We can prove that it may be absorbed and replaced by other substances. Nevertheless we can rarely find it as such in the blood itself. This, however, though seemingly an argument against its blood-origin and character, is in reality a confirmation of

the author's view, as the fact is quite in accordance with the formation of pus, or the circumstances of carcinoma, whose blood-origin is one of the best established points in medicine.

2. The proposition laid down under the second head is a kind of defined view of the author's opinion of the pathological processes. It is, in short, a chemico-pathological theory, and certainly explains much better than any other the phenomena of the latter stages of the disease equally with the earliest. It explains well, also, how the disease may originate even in a healthy constitution, and how it may only so far contaminate the system as to give it the general marks of the tuberculous constitution for an indefinite period, without more definite manifestations. This view seems, moreover, consonant with the fact of the composition of tubercle, which, besides the true tubercular element, contains more or less of the adipose substance. This proposition seems, indeed, to hang in some measure upon the first, for when the blood, and more particularly the liquor sanguinis, becomes deteriorated from any cause whatever, this fluid is also liable to be supplied in a modified or defective state, and the character of the cytoblasts will of course vary with that of the blastema. If, therefore, it be shown that the forming constituents of the blood are vitiated, there must be aberrations of cell-development and nutrition, and *vice versâ ;* and, indeed, so far as this part of the argument is concerned, the author adopts this mode of reasoning to a considerable extent.

3. No one has ever doubted the great similarity between phthisis and scrofula; but only a few pathologists have satisfactorily affirmed their thorough identity. Our author unhesitatingly believes in it, and promulgates the strongest proof in favour of this view, based on pathological testimony. It is also established by the chemical and physical examination of the blood, the admitted characteristics of a tuberculous constitution, the signs and symptoms common to both, the fact of hereditary transmission, the anatomical elements of the local products, the characters of tubercular ulcers and their cicatrices, and their frequent coexistence. At the same time he does not hold that the condition of the blood, in any given forms or stages of scrofula and phthisis, is at the period of their occurrence identically the same, but simply that the whole of this series of maladies has its origin and essence in a pathological condition of the *same* nature, and that the predisposition, the general disease, and the local effects, have all a similar starting point in the disease of the blood. In short, he considers that the local manifestations of the disease,—its forms, duration, pro-

gress, and termination, are determined by the organ or structure affected, age, sex, hereditary transmission, and constitutional state, "at the period when any cause of local disease is applied, and especially by the periods of functional activity of different organs." On the whole, we think this view is the only one consistent with the phenomena presented, and, if generally appreciated, would greatly contribute to give more comprehensive views of the most important domain of medical science, namely, blood-diseases.

4. A moment's consideration of the principles advocated will convince the least reflecting of the curability of tuberculosis; and also of the importance of the indications, that the *general* disease should demand almost exclusive attention. On the former point our author believes that, "if the principles of rational medicine were completely and consistently carried out, they are adequate to the accomplishment of the task;" but it is absolutely necessary that the treatment, hygienic and therapeutic, should be adequate to the result proposed. This can only be done in the case of long-continued or hereditary predispositions, by such a change of the blood being effected as will insure the exudation of a healthy blastema, a change which a complete renewal of all the tissues of the body is alone competent to produce. The correctness of this view, we think, none can rightly dispute. It naturally springs from the previous pathological considerations, the only sure basis of a rational treatment, and the best security for its success.

Having thus given a brief outline of the leading views advanced by Mr. Ancell, we shall now proceed to a more particular notice of the manner in which he treats the subject in detail. The author commences by describing the physical properties of the blood in the tuberculous predisposition, as given by various observers, and as obtained by himself, and arrives at the following meagre conclusion, that "some of the characters which mark its diseased condition have been very clearly ascertained." The physical properties of venous blood, the microscopic appearances, and the chemical analysis, as observed by Dubois, Lebert, Nicholson, Phillips, Glover, Shultz, Fricke, Andral, Gavarret, Becquerel and Rodier, L'Heritier and Elsner, combine to indicate a low degree of plasticity in the liquor sanguinis, depending upon a diminution of the fibrine-producing power and a degraded condition of the fibrine itself, a low degree of integrity of the blood-discs, and a diminution of the red globules, excess of water and albumen, with defect of quality in the latter, all which qualities clearly manifest a

diminished vitality,—a view quite in harmony with all the phenomena of the tuberculous predisposition, and with the signs and symptoms of tuberculosis generally. The state of the fluids which supply the blood with the materials for its renovation, viz., the lymph and chyle, is next examined, but it leads to conclusions of doubtful import; and, although he furnishes no direct proof of the morbid condition of the blastema or the liquor nutritivus, the point does not require any elaborate proof.

On this special department of his subject we naturally looked for some *original* researches from Mr. Ancell. He candidly admits the want; "for," says he, "many of the observations recited in this section require confirmation or correction." We must confess we are therefore much disappointed, as we feel assured Mr. Ancell is fully qualified to impart very important information upon this particular inquiry, which is so congenial to his previous labours.

In the two succeeding sections, the structural and functional characters of the tuberculous predisposition are given with a view of showing that this predisposition is not a mere aptitude to be more easily affected by the causes of tuberculosis, but that it is an abnormal state of the constitution both in its solid and fluid constituents, and, in its vital power, of the same nature as tuberculosis. This point appears clearly established. He shows that the skin, the mucous membranes, the vessels, the serous membranes, the teeth, the bones, the muscles, and the very process of growth and character of features, present characteristics, more or less manifest, of the constitutional nature of the disease; while the functions of digestion, respiration, and circulation, the cutaneous, mucous, and renal secretions, and the generative and cerebral phenomena, are all more or less deeply involved through the same influence. He admits, however, that the predisposition thus characterized does not pass into actual disease, although the boundary line he thinks impossible to define. There is nothing which calls for particular remark upon the management of this part of the subject. The case is certainly well put, the facts are ably collated, but the practical conclusions have, we opine, been long acted upon by all intelligent practitioners.

The signs and symptoms of the constitutional disease, which form the subject of the second chapter, are most elaborately described. They are very properly introduced by a reference to the too common practice of waiting for physical indications, and overlooking or treating lightly the general disease.

"Hitherto," he says, "the practitioner has been too much accustomed in all cases to look for the signs of local disease as the earliest

indications, regarding the presence of these as essential for the affirmation of the presence of the general disease; and after the detection of local disease all the symptoms have been too exclusively referred to this as a cause. Hence, from first to last, the signs and symptoms of the local disease have been strangely commingled with those of the general disease; as, on a future occasion, we shall find the causes also have been.

"The existence of tuberculosis, as a general disease, has thus been overlooked or denied. In this work I think I shall show that, in many cases, it is the disease of the blood which destroys the patient, and that sometimes the local disease has comparatively little to do with the fatal event. In all cases it is a malady of the blood, characterised by its appropriate signs and symptoms, to which the local disease must be referred for the explanation of its specialty and its fatality; and the general disease of the blood may be recognised by its signs and symptoms throughout the course of every variety of tuberculous affection."

The state of the blood in the actual disease, as compared with that in the predisposition, differs but little, save in the proportion of the fibrinous element, which becomes considerably augmented. This difference, he considers, is due to the presence of some local action, such as inflammation, which occasions a relative increase. Among the diagnostics, he specially mentions anemia, which presents sufficiently marked differences from the hemorrhagic and the chlorotic forms; atrophy, as marked in the condition of the mucous membranes and the blood-vessels; direct debility of the various functions; diminution of the animal heat; and a certain degree of fever. The emaciation which is most constantly observed, and which may go on, despite a good appetite and digestion, he considers, should be ascribed to the vitiation of the blastema, and a consequent excess of the disintegrating over the integrating process. This view is certainly more consonant with the blood theory, and explains the cases where no ordinary causes of atrophy, such as fever or excessive evacuations, occur. MM. Parola and Rostan are referred to on the subject of the enlargement of the liver in incipient cases,—an interesting feature in tuberculosis as presenting some physiological analogy to what occurs in fœtal life. The observation of M. Fredericq (1851), who has described a red streak on the border of the gums, is noticed by our author, who considers it very significant, and believes that it may appear antecedent to the deposit of tubercle. Hemoptysis, though fully admitted as most frequently a consequence of tubercular aggregation, he believes may be really a symptom of the general disease, and an exciting cause of its localization.

The proof lies in the admitted atrophy of the blood-vessels generally, and in the result of repeated clinical experience.

Under the head of debility of the respiratory function, pretty full mention is made of the interesting experiments of Drs. Sibson and Hutchinson. Though but few observations have as yet been made by the former in cases of phthisis, there seems little doubt that the chest-movement indicator may yet be of positive service in enabling us to detect tuberculous cases in the absence of any evidence from auscultation or percussion. As to spirometry, we are disposed to believe, with Mr. Ancell, from experiments we have made, that there is a range of diminished breathing power short of 16 per cent., and extending frequently beyond, which is a range of uncomplicated tuberculosis. The diminished vital capacity, he is further disposed to believe, bears a direct relation to the diminished number of blood-corpuscles in the blood. This original idea is based upon the fact of the different proportion of blood-corpuscles in the blood of females as compared with that of males, which is calculated to be about 25 per cent. in favour of the latter, and is analogous to the proportion of vital capacity pertaining to the two sexes.

Mr. Ancell speaks very decidedly as to the indication of the symptom, febricula. He considers, that when it co-exists with chilliness, in a marked form, it distinctly presages the local deposit. As to its exact cause there is some doubt, and a suggestion is thrown out, whether this fever is not frequently the result of an animal compound absorbed into or produced in the blood before tubercle develops itself as a deposit so as to produce local effects.

Our author is sceptical as to the occurrence of any such case as "latent phthisis," and is disposed to believe that, in the so-called instances, the general and local signs have been overlooked. This certainly is possible; but if we are to believe the testimony of some of our first clinical observers, cases do now and again occur where the actual disease has not presented any one of the usual symptoms; and, even according to his own showing, the absolute value of the symptoms of tuberculosis in a practical point of view is comparatively little, when taken singly. Hence, practically speaking, the term "*latent*" is by no means misapplied.

The third chapter is occupied with a description of tuberculous deposits and secretions; and under this head the most interesting points appear to be, the mode of formation and development and the seat of tubercle, and its relations to the normal tissues. Mr. Ancell's views are as follows: Tubercle is

composed from the tuberculous liquor or blastema, and contains at least three component elements:—1. An amorphous solid stroma, similar to fibrine, but never containing fibres. 2. Minute granules, consisting of protein compounds, fat, and calcareous salts. And 3. Imperfect cytoblasts and cells. It may be formed from the same blastema as the normal tissues, but not until the blood exudes, in addition, a combination of elements incapable of transformation into tissue. In the progress of the disease the original structure is in part replaced by the tubercle, and in part absorbed. As to its seat, it would appear that its deposition is independent of any special structure, though most generally the areolar is preferred. "Wherever the liquor sanguinis exudes, there may tubercle be met with." Seven forms in which tubercle is presented are noticed:—1. The gray granulation of Bayle. 2. The miliary tubercle. 3. The crude tubercle of Laennec. 4. The yellow granulation. 5. Tubercular infiltration. 6. The gelatinous infiltration. And 7. Tubercular dust. Regarding the identity of these varieties, our author is inclined to believe that a form of gray granulation is a pneumonic product, and that the yellow tubercle may exist independently, thus differing essentially from Laennec and his followers. All pathologists admit that tubercle has a tendency to soften, but much difference of opinion is entertained as to the mode. Mr. Ancell thinks it for the most part a mechanical and partly vital process, and that it is accelerated by inflammation.

From chemical analyses of tubercle given at length by the author, it is plain that this substance is a peculiar compound, differing from all other organic products; but as to the essential character of the liquor tuberculi, these analyses only enable us to conclude that casein is most probably an essential constituent. An important fact discovered by M. Guillot bears closely on this subject; viz., the increase of fatty matter in a tuberculous lung. Though affording much scope for hypothetical deduction, Mr. Ancell is content to leave the matter *sub judice.*

The special morbid anatomy is most elaborately given in the fourth chapter, which embraces about two hundred pages. Every structure of the body seems more or less, sooner or later, involved, and the most minute shades of tuberculous influence are faithfully portrayed; but we can only notice a few of the most interesting. Reference is made, under the head of the skin and sub-dermoid tissues, to what the French writers describe as scrofulous hospital gangrene, which in hospitals attacks ulcers at certain periods, especially those which are fistulous and connected with diseased bones and joints; but there is no

proof given that this change is peculiar in the scrofulous constitution.

While speaking of the morbid anatomy of the stomach in tuberculosis, the opportunity is taken of pointing out the independence of the local production of tubercle on the inflammatory process; as the deposit of tubercle in this organ, even when inflammatory action is indisputable, is a most rare occurrence. The account of the tubercular lesions of the remainder of the digestive tract is much enriched by repeated references to the elaborate work of Rilliet and Barthez upon infantile pathology.

In his general observations upon the tuberculosis of the skin and mucous membrane, the chronic character and intractability of scrofulous and tuberculous sores are well accounted for by the deficient and vitiated elements of the blastema. On the thoracic lesions the authors just mentioned are quoted to prove that tuberculization of pleuritic tissue may, contrary to the rule laid down by Louis, occur, independently of pre-existing pulmonary disease; and the observations of Fournet tend to show, that a similar mode of transmission from the serous membranes to the subjacent structures occasionally prevails in the intestines and brain.

The fact of tubercle being deposited in false membranes, as described by Louis and Rokitansky, is fully noticed in the account given of tubercular peritonitis, and leads to the important consideration, that, while the inflammatory exudation, at first perfectly free from tubercle, is being organized, it may supply a new exudation which shall be tubercular. The interesting associated subject of tubercular meningitis is very fully described, and some most important deductions are presented bearing directly upon practice. Thus, when there are no symptoms the deposit is usually on the convex surface; otherwise it is most frequently at the base: and cerebral tubercles, without symptoms, generally argue advanced tuberculosis.

A few instances are quoted to prove that tubercle may be formed in the blood itself,—an important fact, showing that the condition of the blood, which produces generally only a tubercular blastema, may attain such a morbid intensity as to dispense with the preliminary process of exudation.

The deposit of tubercle in the external lymphatic glands may occur independently of inflammation, which, however, always attends a certain degree of softening; and, however alarming it may occasionally appear from excessive amount, it is never fatal *per se.* The description of the engagement of the bronchial and mesenteric glands is full and varied. Tuberculosis of the brain is noticed under the forms of inflam-

mation, presenting the varieties of softening, internal hydrocephalus, tubercular masses, cretification, and occasionally œdema,—views quite in accordance with the conclusions of Dr. West upon the subject of hydrocephalus.

The anatomy of the tuberculous lung, as may be naturally expected, engages a large share of our author's attention. Although he agrees with most pathologists, that the pulmonary cells are the earliest and most frequent seats of tubercle in the lungs, he still adheres to the view formerly mentioned, and originating with Andral, that it may occur in any tissue where nutrition or secretion is carried on. Guillot and Schrœder are quoted in reference to the vascular changes in tuberculous lungs. In the progress of the disease, according to these authorities, a set of new vessels is developed from the pulmonary artery, replacing the original capillaries, and anastomosing with the branches of the bronchial arteries. This network increases with the quantity of tubercle. Were this view fully established, an important deduction, in opposition to ordinary laws, would necessarily follow, namely, that, in proportion as the tuberculization makes progress, the lungs would acquire increased capacity for arterial, and lose it for venous, blood. Rilliett and Barthez believe that the network is only associated with miliary tubercle.

Pneumonia is the most common complication of tuberculosis of the lung; it may be primary, secondary, lobular, or that peculiar form distinguished by the name of acute tuberculosis. A variety of chronic pneumonia in tuberculous subjects, and sometimes called "white hepatization," is well described, and forms an interesting feature of the pulmonary pathology. It is clearly not common pneumonia, as the texture is peculiarly hard, but a result of coexistent lymph and tubercular deposit. Though not mentioned by Mr. Ancell, this lesion seems to present some of the characters of cirrhosis of the lung. The whole subject of softening, ulceration, and formation of cavities, with the curative processes, is elaborately detailed.

The modes of spontaneous cure he enumerates are as follows:—Absorption; atrophy, in the case of miliary tubercles; cretifications, most frequent; sequestration, by means of an enveloping cyst; cicatrization, the cavity becoming fistulous; and the cavity becoming filled with a fibro-cartilaginous laminar deposit—with condensed cellular tissue—with a cretaceous substance; and, lastly, transformation of tubercle into melanotic matter.

The tubercular pathology of the lungs is concluded with a condensed view of MM. Rilliett and Barthez' excellent ob-

servations upon the lungs of tuberculous children. Miliary tubercles are in them the most common; and tubercular dust has been frequently observed. Softening is more frequent from eleven to fifteen years than previously, and prefers the right lung for its seat. The combination of pneumonia and tubercles is a most frequent occurrence; and, in fact, some degree of pneumonic inflammation appears necessarily associated with the progress of tubercle.

It has been laid down with decision by many pathologists, that there is a positive connexion between the fatty liver and tuberculosis. This opinion Mr. Ancell notices as encountering material objections from the statistics of Rilliett and Barthez, which show that the coincidence is observed only once in thirteen times. Upon the interesting question, as to the accidental or essential connexions between tuberculosis and granular kidney, no positive opinion is offered; and indeed there does not seem to be any sufficient evidence to establish the affirmative, although it is highly probable, and agreed to by most modern pathologists.

A remarkable circumstance, connected with tubercle in bone, is noticed,—namely, its frequent occurrence as the sole site of the deposit, even in adults. The changes in joints, consequent upon tuberculosis, are very fully described, and the authorities, Lebert and Brodie, are largely quoted. According to the former, nearly 80 per cent. of the cases of scrofulous disease of the articulations engage the *lower* extremities. The opinion of M. Pigeaux, respecting the cause of the *curving in of the nails*, observable in a majority of cases of phthisis, is referred to: he concludes, that it appears to depend chiefly on an œdematous infiltration of the pulp of the fingers, by which the nail becomes mechanically forced outwards and forwards, and thus its end is curved round. He considers it one of the earliest signs, and, as such, useful in diagnosis.

The account of the morbid anatomy is appropriately wound up with a condensed *resumè*, exhibiting the following best established general facts on the comparative tubercular lesions in children and adults:—

"1. Tubercles occur in other organs, without there being any in the lungs, much more frequently in children than in adults. 2. They are deposited in a greater number of organs in the same individual. 3. The organs most frequently affected are not the same in children as adults. The occurrence of tubercles in the glands generally, and in the bronchial glands in particular, in the nervous centres, the spleen, and the liver, is much more frequent in children. 4. Gray granulations and crude miliary tubercles exist alone more

frequently in children than in adults. 5. Tubercles are frequently in an advanced stage of development, with softening and suppuration, in the bronchial glands and other organs, being still in a crude state in the lungs, which rarely occurs in the adult. 6. The form of yellow infiltration is much more frequent. 7. The transition from gray transparent granulation to crude yellow tubercle takes place much more quickly (Papavoine). 8. The products and signs of inflammation of the parenchyma of the lungs, and of the bronchial tubes, are more frequently met with, and, when met with, are more generally diffused. Disseminated lobular pneumonia occurs to a greater extent in children, and most frequently explains the rapidity of the fatal result. 9. Cavities are much less frequent in children than in adults; the tubercles in the former remaining at the period of death in a state of crudity. 10. *Vacuoles*, or very small cavities, produced by the softening of small tubercles, sometimes very numerous, are peculiar to the lungs of children. 11. A fatty condition of the liver is a rare occurrence in very young infants. 12. The older children are, the less marked as a whole are the above distinctions, and the more closely the pathological appearances resemble those which are observed in the adult. 13. The local development of tuberculosis in children, particularly while very young, resembles the local development as it occurs in the acute much more closely than in the chronic tuberculosis of adults."

Chapter v., occupying 180 pages, is taken up with the subject of etiology, and forms, perhaps, the most interesting portion of the work. Here, as usual, the details are most elaborate, and every agency which is calculated to induce to any extent the tuberculous constitution or its local manifestation, receives appropriate mention. To a few of the more salient points we can only now refer.

The fact of hereditary transmission is shown to rest upon indisputable evidence. Transmission by the *milk* of a tuberculous nurse is admitted, not merely as a fact in a general sense, but exclusively as a sole cause. Yet, strange to say, in the same sentence in which he records this opinion, he affirms it to be almost essential that the hygienic circumstances under which the child is placed should be unfavourable. The question, however, is one as yet resting upon no other evidence than impressions from experience. A large number of pathologists, among whom are the highest authorities in the literature of tuberculous diseases, admit the closest dependence of scrofula upon *the syphilitic poison.* This doctrine is briefly combated by Mr. Ancell, as being founded upon individual observations unsupported by any sufficient statistical data. At the same time he admits, that syphilis may act as a predisposing cause.

An important law, respecting the influence of *age*, is rea-

dily deducible from the vital statistics arranged in Table XIX., that the mortality decreases uninterruptedly after the age of twenty-five; and, from similar statistics, he is led to state, as a most probable result, that the susceptibility of the blood to the tuberculous transformation is greatest at the earliest periods of infancy, and diminishes progressively as age advances. Among other causes of the predisposition, he notices the influence of continued *fever*, during which the vitality of the blood is liable to be for a long time diminished. But, as we know that a good convalescence has frequently renewed a patient's health, and snatched him from impending tuberculous disease, we are inclined to believe that, when its local manifestations supervene upon a febrile attack, such must have occurred in a previously tainted constitution.

A considerable space is occupied with the consideration of the important agency of *atmospheric vitiation*, a subject to which M. Baudelocque has devoted so much attention, but not more than the subject demands. Indeed some writers go so far as to state their unqualified belief in the capability of this single cause to produce the disease. This view has been warmly disputed by Lebert, Phillips, and others. Mr. Ancell is also among the opponents, and is of opinion, that anything which retards the pulmonary circulation, and diminishes the force and frequency of the respiratory movements, may produce the disease in an individual breathing the purest atmosphere. On the subject of the *alimentary ingesta*, our author believes that even the simple deprivation of the breast-milk frequently lays the foundation for the tuberculous modification of the blood. The influence of *spirituous liquors*, in producing tuberculosis, is, contrary to usual belief, denied. Indeed alcohol may excite local disease, or aggravate it when it exists in tuberculous subjects, but the moderate excitation produced by the continual presence of a small proportion of alcohol in the blood, he is inclined to believe, may, under certain favourable circumstances, act rather as a prophylactic against the general disease. Great stress is laid upon deficiency of *exercise* in bringing on a tuberculous state, and the forcible observations of Mr. Carmichael and Dr. Guy are adduced in proof. On the disputed question whether bronchitis is ever a direct cause of consumption, Mr. Ancell expresses his opinion, that the pathological facts "are conclusive, not only that it has no direct relation to the disease of the blood as cause and effect, but that it has also very little effect as an exciting cause of the deposit of tubercle." A similar view is held as to the relation of pneumonia. Influenza, he considers, acts occasionally as an exciting cause of local disease

in tuberculous habits, but there is no sufficient reason to regard it as a true and direct cause of the disease.

By some authorities in all ages, and at the present time within the tropics, the doctrine of *contagion* as regards pulmonary consumption was and is recognised. Even Laennec admitted its occasional occurrence, and Andral does not decide. The tuberculous theory of our author induces him to distrust the views of the contagionists, and coincide with the greater number of modern pathologists. At the same time, if ever communicated, he adds, it can only be "as an exceptional case, where the closest communication has taken place, and that generally for a long period."

The subject of *combined agencies* in reference to constitutional effects on the blood, and organic structures, is very forcibly shown in connexion with tuberculosis, as it occurs in different tribes of animals:—

"If there is difficulty in determining the fact of the production of tuberculosis, under particular influences regarded singly, there is none when we view several of these influences in combination, and here, especially, there is no occasion for any new or direct experiments. Unhappily, man, in his condition of civilization, affords illustrations on the largest scale. It is civilized man *par excellence* who is mowed down, and his years cut short by tuberculosis; and it is the habits, customs, and institutions of civilization which are especially conducive to its production.

"This is amply illustrated in an analysis of the facts already detailed, and by those which follow; but at the same time the remark is due here, that it can in no sense be regarded as a necessary result of civilization. It is incidental to the present transition stage—to the *period of progress;* and every philanthropist will rejoice in the reflection that the faculties of man are fully adequate, by moral and physical improvement, not only to abate those evils which he has himself created, but that, under the Christian dispensation, by the progress of human knowledge, he may hope to succeed in totally eradicating this curse."

There is strong reason for believing that the tubercular predisposition is induced, to a certain extent, by *prison discipline,* arising from a combination of injurious influences. As an example, it is stated that in a period of eighteen years, in the Millbank Penitentiary, where these causes prevailed, nearly half the deaths, and half the pardons, on medical grounds, were due to tubercular disease. The experience of MM. Rilliett and Barthez would show, that too long *residence in hospitals* tends, at least in the case of children, in like manner to the production of the disease. We believe, however, that in the instance of hospitals, the tendency might be reduced to an in-

nocuous minimum by proper attention to site, and mode of construction of the buildings.

Statistics are wanting to show the precise influence of *occupation* in the production of tuberculosis; but, imperfect as they are, Mr. Ancell thinks them sufficient to establish the predisposing agency of indoor employments, especially when combined with deficient exercise.

Phillips' view of *factory labour* is endorsed with little modification by our author, who believes that "the occupation and habits of the poor in former times, before our factory system sprung up, and at the present time in localities where factories do not exist, are, under many circumstances, much better calculated to produce the disease, than factory labour." The subject of *climate*, in relation to the prevalence of tuberculosis, is fully discussed, with the following general result:—

"There are absolutely no facts to establish that climate alone is adequate to the production of the disease; at the same time a total negation of the influence of climate is totally unwarranted. In the case of man and animals, transported from one climate to another, where, as a general fact, tuberculosis results, they have always been subjected to one or more anti-hygienic inflences in addition to the change. Nevertheless, the facts very unequivocally establish that climate materially modifies the effect of these influences. Change of climate in most cases necessarily involves change of hygiene, which may be for the better or worse as respects the production of tuberculosis. The prevalence of the disease amongst the natives, compared with their modes of life and occupations, must therefore be the great criterion of the influence of particular climates."

And, in another part, he expounds his views thus:—

"In fact, the statistics lead to one general conclusion,—viz., that as respects the etiology, the habits and customs of mankind ride over all climatic influences; that if the European inhabitants of Calcutta or Alexandria were to adopt the modes of life pursued in the metropolis of the British Empire, tuberculosis would, after a period, be as frequent in these localities as it is here; and conversely, if the inhabitants of the densely populated countries of Europe were to improve their habits and customs as to labour and rest,—indoor and outdoor occupation; the size, construction, modes of ventilation, and sites of their houses, streets, and towns; with other circumstances of hygiene, after a sufficient period had elapsed for hereditary influence to wear itself out, they would probably be more free from this disease than the inhabitants either of Lapland, Canada, Greenland, India, Egypt, or Ceylon."

The essential nature and general pathology of tuberculosis form the subject of the sixth chapter, which opens with a ca-

talogue of the principal theories that have prevailed in different ages of the world. The chief doctrines which have been broached of late years are then more fully described, viz., Carmichael's theory of indigestion; Todd's strumous dyspepsia, dependent on portal plethora; M. Shultz's imperfect chyle and lymph granule; Simon's lymph hypothesis; M. Parola's doctrine of imperfect hematosis; the theory of the inflammatory nature of tuberculosis, such as is advocated by Williams, for example, who believes that lymph, pus, and tubercle, pass by imperceptible gradations into each other; the nervous hypothesis of Copeland; Dr. Madden's poison theory; and, lastly, the theory of mal-nutrition, as entertained by M. Baudelocque, Dr. Hughes Bennett, and Dr. Addison. Of all these views, Mr. Ancell is disposed to admit the last theory to be the nearest approximation to the truth; so much so, indeed, that he believes the pursuit of the inquiry, as thus indicated, "will ultimately lead to a knowledge both of the *modus operandi* of the causes, and of the essential nature of the disease."

Mr. Ancell's own ideas of the disease we have already referred to, as well as the combination of proofs by which he was led to espouse it. Agreeably to this view, it is a point of the most momentous importance in practice to be enabled to diagnose the existence of tuberculosis *previously* to the deposit.

"In many cases, with a knowledge of the antecedent and present history of the patient, and a correct estimate of the causes of the disease, the diagnosis may be made, if not with certainty, still with a high degree of probability: in other cases, with all this knowledge at our command, it is a problem of the greatest difficulty. It involves the determination, at any period of life, of the existence or non-existence of a tuberculous condition of the blood, of that quality which produces the mal-nutrition of the tissues, so fully described (p. 20), and which keeps the individual in continual risk of the exudation into the intimate structure of the vital organs of an imperfectly organizable blastema. Unfortunately, microscopical anatomy and chemistry afford us little assistance: there is at present no known sign of diagnostic value by which tuberculous blood can be distinguished from that which is non-tuberculous. In the absence of this demonstrative evidence, we can only fall back upon the history of the case, and the existing signs and symptoms. There are none of the latter, taken separately, which do not occur in other diseases; at the same time, there are certain combinations which render the existence of tuberculosis highly probable, if they do not reduce it to a certainty, and that certainty may not infrequently be secured by attention to the family history, the occupations and habits of life of the patient, and the diseases to which he has been previously subjected."

If we can, then, from a consideration of *combined* phenomena, ascertain that the tendency exists, we may be pretty sure that the tuberculous state of the blood is also present, and that the time for action has arrived. It were much to be desired for practical purposes that this department of the subject, especially the differential diagnosis, had been treated more in detail. We must repeat, that the main point for the practitioner is the *early* discrimination of the disease; and we fear that he would seek in vain in this work for any addition to the knowledge already accessible on this point. As we have already mentioned, Mr. Ancell gives great hope for the curability of the disease:

"The local mischief can never be repaired so long as the blood continue diseased, and if the blood by any means resume its normal constitution and its healthy vitality, the local affections, if no vital organ be too extensively diseased, will get well spontaneously."

And even in the most advanced and necessarily fatal cases, every prudent practitioner will exercise the very greatest caution in their prognosis as to time.

"The propriety of this follows especially from the following considerations:—Death by the blood disease is essentially slow, the blood becomes gradually more and more affected, and the nutrition over the whole body ceases. Ultimately it would appear that the blood is totally incapable of furnishing, not to say an imperfect blastema, but a blastema in which fibrillation and cell nutrition are possible. Its tint is very often changed, appearing, through the transparent tissues, of pinkish-violet shade; and the larger cutaneous vessels, although very thinly covered with the surrounding tissues, are comparatively empty. Where no intercurrent affection of the nervous system intervenes, the maintenance of the nervous and intellectual power to the last is truly wonderful. The appetite continues good; the functions of the alimentary canal perfect; the senses keen; and the intellect clear, in the midst of the havoc produced by the general failure of the nutritive functions; but that this exhibition of vital force is fallacious, as to its real amount, and the constancy of its supply, is shown by the exhaustion which intervenes, and by the frequent occurrence under these circumstances of a suddenly fatal issue before the local complications have run their complete course. A knowledge of these facts induces the necessity for the caution we have mentioned,—a patient whose existence might be expected to be prolonged for weeks, or even months, will sometimes die from exhaustation alone, on some slight change of position or any severe mental impression. We have seen men engaged in their business a day antecedent to death brought about in this way; and a lady has been known to order her carriage, pay visits, and die within a very few hours afterwards. So also the fatal event will

sometimes follow, where the appetite has been good to the last, and very shortly after a full meal."

The relation of tuberculosis to other blood diseases forms the subject of a most interesting section. Tuberculous disease may, indeed, be found associated with any other; but it seems to be established that, from the infrequency of certain associations, some diseases appear to be antagonistic. Thus cystic tumours, especially of the ovary, bronchocele, chlorosis, scurvy, cancer, gout, typhus, typhoid and intermittent fevers, are but rarely found coexistent with or inducing scrofulous diseases. As this point is one of practical importance, as well as calculated to throw some light on the pathology of the blood, we are glad to see that Mr. Ancell has treated it *con amore*, and by useful hints and suggestions rendered it a most valuable and original feature of his work.

The seventh chapter is devoted to the nosology of the disease; we cannot afford room to do more than refer to a single topic discussed, namely, the cause of the *hectic* paroxysm. Purulent absorption has been deemed the most usual pathological state. Without entirely denying this view, Mr. Ancell believes that it most probably takes its rise from the destructive processes in the organic tissues, which are capable of furnishing a sufficient irritant produced from the *effete* materials, and absorbed into the blood. But whence the periodicity of the paroxysms? To answer this, we must appeal to the physiological law of periodicity in general, and in relation especially to the process of absorption, which is known to be subject to disturbing causes. This view is corroborated by the fact, that digestion influences the times and character of the hectic symptoms.

The treatment the subject of the remaining chapter is (VIII.).

The means of prevention occupy, of course, the largest share of his attention; and in the management of this subject we think he exhibits more than usual acumen and comprehensiveness. Instead of following the beaten path, he enters largely into the most likely mode of limiting the disease, not merely in individual cases, but in the community at large. He successively points out the means of restricting hereditary transmission, the production of the disease or its predisposition in the propagation of the species, its development in the fœtus, and after birth; and concludes the subject with the medicinal treatment, the means of preventing the deposit, and rendering it inert. Though he does not attempt to lay down a complete system of hygiene, yet are we fully satisfied that

nowhere will be found a more useful, interesting, and finished sketch of this important department. Agreeably to the author's view of the pathology of the disease, his aim has been especially—

"To describe those measures upon which our chief reliance is placed for converting unhealthy into healthy blood, and for securing the absorption and elimination of the imperfectly organized tissues of tuberculous subjects, and the assimilation of more fully elaborated and organized materials."

Under the hygienic circumstances, which are given at length, Mr. Ancell is decidedly of opinion, that tuberculosis *could never be acquired;* and, by consistent and efficient treatment, even in confirmed cases, *the disease may frequently be cured.* It is difficult to make a selection from this chapter, which contains so much of valuable fact and remark. The following, however, is a fair specimen:—

"*The Diet of Tuberculous Children.*—The real difficulty as respects diet arises from weaning. . . . Suffice it to say, that our most watchful care is required to see that children are fed with a diet which contains all the staminal or essential principles of nutrition in due proportion; that they are neither over nor under, nor too seldom, nor too frequently, fed, and that their diet is neither too concentrated nor too diluted. In practice, we find all these points most grievously sinned against. Animal food should be allowed from the very earliest period that they can masticate it, and they should be most carefully taught to do so; they ought also be habituated to the use of fat; and should any difficulty on this point arise, the meat should be so chopped and mixed with the fat as to disguise it. Neither the principle of invigorating the frame, nor the tendency to strumous dyspepsia, ought ever to be lost sight of, and the latter ought to guide us in the rejection of injurious and doubtful articles of diet: of these, articles having the saccharine principle as a basis are, perhaps, most frequently at fault; an excess of sugar ought to be most carefully guarded against; and when we consider the weak structure of the digestive apparatus, and the defective animalization of the digestive fluids, it becomes obvious how necessary it is to prohibit fermentable and tough indigestible vegetable matters, as jams, marmalades, fruits with thick skins, 'waxy' potatoes, and the like. As children advance in years, their diet admits of modification; but so long as the object in view is to renovate the tuberculous constitution, and no local disease exists already inflaming the blood, a good diet should be steadily maintained. Even throughout various forms of local inflammatory disease, such a diet is attended with the most beneficial results over the local manifestation, as frequently witnessed in tuberculous ophthalmia, cutaneous affections, bronchitis, affections of bones, glands, &c. It has sometimes happened, at all

events in adults, that, in consequence of good diet, in conjunction with constant exposure to the open air and exercise, the tuberculous state of the blood has given place to healthy hematosis, and the local disease has healed, even in the last stage of tuberculosis pulmonalis."

The following extract, on the use of cod-liver oil, seems to us to give a very impartial view of the results of the experience of this agent; it is neither enthusiastic nor tame, but places the remedy satisfactorily before the mind as one of the most valuable auxiliary agents in the treatment of tuberculosis:—

"Among the advantages which result from the use of the cod-liver oil in tuberculosis in any of its forms, there is none perhaps of more importance than that it sustains the nutrition and strength of the patient, so as to allow of all the other hygienic and therapeutical measures necessary for the recovery of the patient to be adopted and persevered in.

"The oil should never be administered empirically, but always as a part of the rational system of treatment. I feel convinced that it has often failed when it might have succeeded, for want of attention to this principle. It should be remembered, that notwithstanding its undoubted beneficial influence, the permanency of its effects is still undetermined; and although it may increase the weight of the body and improve the constitution in some particulars, patients frequently remain pallid under its use, and soon relapse.

"Exercise in a pure air, a good diet, cod-liver oil, attention to the secretions and excretions, and the bath, are so many hygienic and therapeutical remedies, ancillary to each other, and offering a fair chance of renovating the blood, improving the nutrition, and curing the disease, to which may be added iron and other medicinal agents, as the particular form of the disease or the particular case may require."

Our readers will now perceive, from our brief analytical outline of so bulky a volume, something of the scope and value of its elaborate details. The mere compilation of such a work must have been a task of no ordinary labour; but when we reflect, that the web that binds the vast host of facts, gathered from the records of all times and countries, is the result, in a great measure, of original thought and original research, our wonder gives way to the more lasting and worthy sentiment of admiration. Not merely is there much given of established facts, but we have here the embodiment of those facts in general principles, whose ultimate practical application we at the present time, perhaps, only dimly discern. Mr. Ancell's style is plain, but eminently perspicuous. He uses no rhetorical flourish or poetic imagery; even a metaphor is rarely indulged in. He aims at giving the unvarnished idea, and we have sel-

dom to complain of needless repetition. We think the profession is deeply indebted to the author for the labour he has undertaken, and the talent he has exhibited, in presenting at one view the complex subject of tuberculous disease, and placing it in such a novel and instructive light as must ultimately educe a more rational and successful practice than has hitherto been adopted.

Practical Remarks on Palpitation and other Functional Diseases of the Heart. By John Calthrop Williams, M.D., &c.; Physician to the General Lunatic Asylum near Nottingham, &c., &c. London: Churchill. 1852. Second Edition. 8vo, pp. 207.

It cannot be denied that the pathology of cardiac diseases has been the subject of industrious investigation, and if that certainty in results, so desirable by the practitioner, has not been gained, the fault rests not in the neglect of the pursuit of knowledge, but in the difficulties which surround the question. We think it must be admitted, that fastidiousness is one of the characteristics of the age we live in. The wonderful improvements of modern times are regarded without astonishment, and the ignorance and privations, as regards knowledge, of our forefathers, in comparison with their descendants, are often reflected on with contemptuous pity. The scientific investigator, possessing an enlarged mind, must, however, feel that knowledge has its limits. He may make discoveries, but, as each new light is thrown on his path, he more clearly perceives the rugged way, and the difficulties which impede him. The point of ascent at which he aims is yet far above, and mayhap not to be reached.

We have been led to these reflections by a consideration of the great improvements in the diagnosis of cardiac diseases afforded by auscultation, although not yet productive of that perfect accuracy satisfactory to the inquiring mind. To-day we may almost map out the size of the heart, and speak confidently of the exact seat of valvular disease, which will be verified by post-mortem examination. To-morrow we shall meet with a case in which all the resources of our art will fail, for a time, to determine the question,—whether the disease be organic, or merely functional, and available to successful treatment. We should not, however, be thereby deterred from persevering investigation, and we are gratified to observe, that the author of the work before us has given his aid in an endea-

vour to elucidate an obscure but highly interesting subject of pathological research. We quote his own words in explanation of his intention:—

"My object will be especially to point out the distinctive marks between palpitation the result of organic disease, and sympathetic or nervous palpitation, delineating less minutely the symptoms of actual organic disease, and more carefully those which simulate disease of the heart, so as to unmask the nature of palpitation when it exists as a sympathetic phenomenon."

Two chapters are devoted to the consideration of the phases of the heart's action, morbid and natural, on which it is unnecessary for us to dwell. The author gives Dr. Walshe's opinion on the points of distinction between organic and inorganic murmur: he attaches some importance to the venous hum in the jugular veins in anemic persons, as indicating that the abnormal sound of the heart is of purely functional origin, but properly alludes to the possible co-existence of organic disease as rendering the diagnosis difficult. In determining on such points we must examine carefully, and weigh well, all symptoms and signs before coming to a conclusion, and under such circumstance a single sign may ultimately influence our decision. Thus, in a case which lately came under our notice, the venous murmur mainly guided us in the treatment. A girl, aged 14, had been complaining for some days of pain in the cardiac region, which gradually increased in severity; the action of the heart was greatly excited, with strong impulse, but there was no abnormal murmur over this region; the pulse was quick and soft. The patient was of spare habit, with a pallid face, but not decidedly of an anemic character; a loud venous hum was observed in the jugular vein, and we arrived at the conclusion, that the pain was neuralgic in an anemic individual. The solution of the pernitrate of iron was administered, and in ten days afterwards, the menses appeared for the first time, with immediate relief to the cardiac symptoms.

The author divides palpitation into active and passive, the former occurring in persons of plethoric, sanguine, and susceptible habit, its most frequent cause being congestion of the heart. In this form the impulse of the heart is increased, laboured, and struggling, but the force of the arterial pulse is diminished, because the heart is unable to circulate the blood with its accustomed energy. The difference in character between the apex beat and the pulse affords a diagnostic mark between congestive and plethoric palpitation: in the former, the excess of blood is confined in a great measure to the heart and pulmonary venous system; in the latter, the whole system

is in a state of plethora, and the force of the heart's impulse and of the pulse are both increased. To distinguish these affections from hypertrophy is often a matter of considerable importance, and Dr. Williams lays down the following diagnostic signs:—

"In the organic disease the impulse of the heart is hard, circumscribed, and heavy; it raises the head of the observer at each stroke. The sound, instead of being clear, is obscure, and, as it were, muffled. The area of percussion dulness is increased, and the apex is often displaced. In the functional disorder the impulse is excessive, but short, and not heaving; the site of the apex beat is not displaced; the sounds are loud and clear, perhaps too loud; there is no abnormal præcordial dulness: we have, in fact, what Dr. Latham aptly terms, 'mock hypertrophy.' In hypertrophy, when the palpitations are *pro tempore* suspended, the beat of the heart still remains hard and more circumscribed than it ought to be; and, indeed, the movements of the heart are not always of a nature to merit the name of palpitation; they are not necessarily more rapid than in health; the patient does not always perceive them himself; and when he does, although they may in reality be much more forcible than natural, he seldom complains of the sensation being a source of distress, unless when the capacity of the chest is diminished by pressure, position, or otherwise. He attaches no undue importance to his symptoms, he evinces no unnecessary alarm respecting them, and even in the advanced stages of the complaint seems insensible to his danger."

We must refer our readers to the work for an exposition of the various causes and characteristics of "sympathetic or passive palpitation." Various authorities are quoted, and we are surprised at the omission of the name of Dr. Corrigan from among them. That physician published in the Nineteenth Volume of our former Series a valuable paper on functional derangements of the heart, in which interesting and novel views were advanced. There is no allusion to the most important of them in the work before us, and certainly our author's task would have been more perfect, had his attention been directed to the communication referred to. He who publishes a work should be well acquainted with the literature of his subject; at the same time, it must be admitted that isolated communications may possibly escape observation, and we are willing to believe such to have been the case in the present instance.

We shall here allude but to one point, to which Dr. Williams directs attention, namely, to the deductions from intermission of the heart's action and of the pulse. This phenomenon has been ascribed by Forbes to unsuccessful action or contraction of the ventricle,—not an *intermission* of the ventricular

contraction. Laennec believed the existence of two kinds of intermission,—one, *real*, consisting in actual suspension of the heart's contraction; the other, *false*, resulting from contraction so feeble as to be incapable of perception by the finger applied to a distant artery. The patient is often conscious of this peculiarity, and Dr. Brown thinks that this perceptibility is pathognomonic of nervous or sympathetic intermission of the pulse, and does not occur when the phenomenon bears reference to organic disease of the heart.

Without stopping to investigate the value of these opinions, we may observe, that intermission of the heart's action and of the pulse apparently exists, not only independently of organic, but, we would add, if the term were allowable, of functional, disease. Lately, an eminent provincial physician visited us, and, in course of conversation, extended his hand to have the pulse felt; it was intermitting. "Such," he observed, "is the character of my pulse so long as I remember, and yet I never felt that I had a heart." We informed him of two persons who were for more than ten years under our observation; they presented this phenomenon independent of any symptom of cardiac disease,—one, a gentleman, died at the age of 78, of influenza; the other died aged 82. We are not prepared to say how long this character of the circulation had existed previously in these persons.

It is a curious fact, supported by the experience of eminent observers, that in persons subject to irregularity of the pulse, the arterial beat became regular in the course of severe fever; and the first indication of an approaching favourable crisis has been the return of the pulse to its habitual irregularity. We cannot decide on the cause of this special character of the circulation. It is a question, whether it may be congenital, or acquired from some morbid alteration or sympathetic action, and remain established coexistent with perfect health to the individual.

We regret that the interesting subject of functional disorder of the heart, with diminished action, has not received more attention from Dr. Williams; it is involved in obscurity, and has not obtained a sufficient amount of investigation. Where the cause is apparent, and the affection only temporary, as from excessive loss of blood, we can comprehend the character of the complaint; but when slow in progress it gradually becomes more marked, the heart losing power by degrees, accompanied by a feeling of sinking or by syncope, the only explanation which presents itself depends on the vague supposition of diminished nervous energy, or the existence of disease

beyond the reach of diagnosis. We believe, that where the complaint exists without an evident pathological cause, its origin may frequently be ascribed to great mental exertion, accompanied by undue fatigue of the body. Under such circumstances, the great nervous centres and the heart suffer; there is no compensating power, and disease follows as a necessary consequence. In the absence of moral causes, we may infer the arrest of nutrition to the heart, but our conclusions must often be unsatisfactory, from our limited power of diagnosis in those distressing affections.

The author notices angina pectoris, and details the various opinions entertained as to the nature of this disease. He regards it as a neuralgic affection of the heart, excited by a variety of causes, or often superadded to organic disease of that organ; the seat of the malady being in the sensory nerves of the heart. This opinion is in opposition to that of M. Bouillaud, who places it in the intercostal and phrenic nerves. It is to be hoped that histology may hereafter throw some light on this intricate subject. It appears probable that there may be some morbid alteration in the heart's structure which pathological anatomy is not sufficient to demonstrate.

The chapters on diagnosis and treatment are well worthy of attentive perusal, and contain many useful hints, to which even the experienced practitioner may refer with advantage. On the whole, the work is written in a clear and philosophic style, without any attempt at effect, and bears the stamp of thoughtful research and matured experience on an important and interesting class of diseases.

Discours sur les Remèdes Secrets, Autorisés par le Gouvernment. —Par M. Soubeiran, Secrétaire Général de la Société de Pharmacie de Paris. Paris: E. Thunot et C^ie^. Pamphlet, pp. 24.

In M. Soubeiran's pamphlet, which consists of an address read, and received with the most marked attention, at the re-opening meeting of the School of Pharmacy and of the Society of Pharmacy, in Paris, we are presented with much valuable and interesting information in reference to "Secret Remedies," and their authorization by the French Government. That the subject is most important, as being intimately connected with the public health, and that it is, therefore, one which we may with advantage consider, not only as it concerns our neighbours but ourselves, will scarcely, we think, require argument

to prove; we shall therefore at once proceed to an examination of the contents of the discourse of the renowned pharmacien.

In the commencement of his address the author states, that his intention is not merely to bring before his hearers abuses of the existence of which they are well aware, but to show the Government what useless productions, what fruits of charlatanism, and what barefaced impudence, are fostered by its protection; and how, under its ægis, ignorant or avaricious men turn to their own profit both the purse and the health of the community.

The evils of the system he is about to denounce had not escaped the penetrating sagacity of the Emperor Napoleon; for by a decree on the sale of secret remedies, dated 8th August, 1810, he declared *null* all authorizations which might have been previously granted, and enacted, that new and useful remedies should be purchased by the Government after due investigation, and that they should be made public.

This decree, however framed in wisdom, was rendered fruitless by the simple fact that it was never carried into effect; and as the reason assigned by the author for its having been allowed to remain dormant involves a description of French character, which, as being drawn by a Frenchman, will probably interest our readers, we shall quote it at length.

"France," he says, "is, I believe, the only country in Europe where so little attention is paid to the execution of the law, and for this reason, that the Government is always more or less the reflection of the people with whose guidance it is charged, participating in its qualities and its defects, and often equally devoid of fixity of design and of consistency in performance. We are, it cannot be denied, a nation of rare intelligence. With no other people do so many ideas originate, nor do any express their thoughts with more clearness; no other nation exhibits so much sagacity in discovering the still distant object of its search; hence are derived the mission of initiation which has devolved upon us, and the influence we exercise in the world. Had we but the secret of combining perseverance and moderation with these eminent qualities,—perseverance, which ensures success, and moderation, without which the best things may become the worst,—we should be entitled to style ourselves the first people in the universe. But, alas! such has not been the will of Providence; we have been subjected to the law of all terrestrial things, among which nothing is perfect; evil stalks side by side with good; the harmony of the whole is purchased with the imperfections of the detail. How often have our creative vividness of imagination,

our rectitude of mind which rushes straight to its goal, remained unfruitful through our want of perseverance! How often, in our exaggerated desire to arrive quickly, have we dashed ourselves against the obstacles with which our road was strewn, because we had not patience to turn them aside or remove them! How many great and pregnant ideas have arisen in France, and yet, in order to be productive, have needed to ripen in less impatient minds!"

Notwithstanding, then, that Napoleon's intention in issuing the decree was, "on the one hand, to diffuse the knowledge and augment the useful resources of the healing art; and, on the other, to restrain quackery from imposing a tribute on credulity and from causing fatal accidents," it was never put in force. A commission was to have been appointed to examine and declare if the remedy brought before them was free from all possibility of being dangerous or hurtful in certain cases; if it was good in itself; if it was productive of effects useful to mankind; and, lastly, what was the price to be paid to the inventor.

Nothing could promise better, observes M. Soubeiran, but the execution was lamentable. The Government did not buy the remedies which had formerly received authorization. In this, he adds, it did well, for they were not worth setting a price on. In a word, the decree was first postponed, then modified, and, finally, superseded by an older decree, which permitted the advertisement and sale of authorized remedies, thus anew throwing open the door to the invasions of quackery.

The author believes that a man practising any branch of medicine, and having made a discovery useful to mankind, is morally guilty if he conceals it. The law is then easily framed: it need only forbid the sale of secret remedies, without taking further notice of medical discoveries. But such principles are not acceptable now-a-days, and the author feels himself obliged to assume, that the discoverer of a mode of treatment, or of a new remedy, has a right to monopolize it to his profit, or to exact a suitable indemnity from society.

The value of a discovery in medicine is estimated not by the mental efforts, or the labour it may have cost its author, but by the service it renders to the healing art. If it has furnished the means of neutralizing any of the great scourges which prey upon humanity, the recompense cannot be too splendid. Such has been the introduction of bark or of mercury into medicine, or the discovery by Coindet of the therapeutic action of iodine. In such a case the Government cannot hesitate; its duty is to recompense the author largely both in

honour and in fortune; it ought also immediately to publish the composition of the remedy, not only that it may be known to all, but also to prevent its price being so raised, through the necessities of the discoverer, as to render it inaccessible to any. In the author's opinion, the strict enforcement of the decree of the 18th of August, 1810, is the only admissible rule in dealing with such heroic remedies as are a boon to mankind. Supposing, for example, that an unfailing remedy for hydrophobia were discovered, could we hesitate to publish it, and place it within reach of all?

But past experience will prevent the Government adopting the mode of recompense by purchase, "for if it has been judiciously advised to acquire in this manner the knowledge of certain remedies, as bark, ipecacuanha, and Kermes mineral, has it not also been induced to spend the public money in purchasing some formulæ which have immediately and justly fallen into oblivion? Even the Academy of Medicine itself proposed to pay 24,000 francs for a remedy which had, forty years before, procured a recompense for its original inventor. Still this system of purchase would undoubtedly be the most advantageous, and would be calculated to make the Government sparing of this class of rewards."

As, then, the system of authorization to sell is that likely to be adopted, the author feels bound to state the conditions which should regulate their issue.

The great difficulty is to decide what discoveries deserve to be rewarded. If every improvement in the preparation of a medicine, or every new pharmaceutic form applied to a substance hitherto employed in another manner, be so entitled, it is clear that the committee of investigation would not have a moment's repose. There is no pharmacien of intelligence who could not supply such inventions, and the author himself would undertake to bring forward a weekly contingent of such easy discoveries.

To meet this difficulty M. Soubeiran proposes that the committee of investigation should consist of a few *ex officio* individuals, whose knowledge, independence, and disinterestedness, would warrant the justice and impartiality of their decisions. Such would be found, for example, in the Dean of the Faculty of Medicine, the Director of the School of Pharmacy, the Professors of Chemistry, Pharmacy, and Natural History of the two Schools, the Professor of Therapeutics, and a Practising Physician and Pharmacien.

The authorizations should only be granted on the following conditions,—that the formulæ of the authorized medicines be

published, that such medicines be sold only by pharmaciens and on the prescription of a physician; that the authorization be personal and for a limited period; that publicly advertising the medical properties of the remedies be forbidden; and, finally, that all remedies which have to the present time received authorization be subjected to a new investigation.

It is necessary that the composition should be known:—first, that we may be sure the article we purchase is what it professes to be; secondly, that the vendor may not be at liberty to change its composition according to his own fancy, as has too often happened; lastly, how can it be conceived that a physician should prescribe a medicine without knowing its composition, and thus being enabled to foresee what influence it may have on the other substances which he may think it advisable to combine with it. On this subject the author quotes the following eminent authorities:—

"Nothing is more dangerous than secrecy in remedies," said the Royal Society of Medicine in 1790, "the most useful often become fatal by the simple fact of remaining covered with the veil of mystery. This mystery excites the enthusiasm and keeps up the credulity of the people. It produces uncertainty in the application of means employed without being known. The Society has in its records multiplied proof of the unhappy effects, and, we fear not to say, of poisonings, caused by remedies the success of which, in some cases, had been attested by well-known men, and by citizens of every rank."

"The simplest reflection," says Pelletan in his *Clinique Chirurgicale*, "is sufficient to show, that every man who retails a secret remedy is master of the health and of the purse of the sick who have confidence in it; but what are we to think of physicians who place themselves at the mercy of these quacks? And yet we see such every day prescribe the 'juice' of this person, the 'wine,' the 'pills,' of another, either in cases where their own remedies fail, or under the pretence that they have seen the best effects from these secret remedies. We might tell them that their personal resources must be very limited if they are reduced so low as to be obliged, like the vulgar, to have recourse to quacks; but it may be sufficient to show them that they cannot even depend on the remedies of the charlatan, liable as they are to be altered at his will, and that they may find themselves some day scoffed at by these very impostors, who have employed in their receipts only the same medicines which had been already well or badly administered by the regular physician."

The following is the opinion of an eminent practitioner:—

"When I see," says Swediaur[a], "men, legally authorized to style themselves physicians, recommending a secret remedy to their patients, I am moved with pity and indignation, because nothing can more strongly prove the degradation into which medicine has fallen in France than to see physicians prescribing a charlatan's nostrum—a secret remedy—in preference to making use of those with the efficacy of which they ought to be acquainted; or proposing to their patients to have recourse to the information of more experienced medical men if they feel themselves deficient in a particular department of the healing art." And in another place he observes:—"It is disgraceful, and would prove that the art of medicine is sunk to the lowest depth of degradation—it is disgraceful that physicians and surgeons, who have received a liberal education, should recommend at random the remedy of a charlatan, with the composition of which they are unacquainted, and of which they, consequently, cannot calculate the effects."

We need scarcely say how fully we agree in the foregoing observations. We can hardly imagine a more unscientific proceeding on the part of a physician than prescribing medicines of the composition of which he is ignorant. Surely the limits of the legitimate Materia Medica are not so narrow that remedies, *at least* as efficacious as those whose nature is thus veiled in mystery, should not be found within them.

The sale of an authorized remedy should only be intrusted to the pharmacien, and should not be allowed without the special prescription of a physician. M. Soubeiran cannot see why the guarantee of men, whose education renders them competent judges of the indications for administering remedies, should be dispensed with; either the remedy is trifling, and it does not merit the favour of an exception; or it is active, and cannot safely be exhibited indiscriminately, and without the direction of a professional man. The authorizations should be personal. The Government has always a right to know into what hands the authorization is intrusted, and if the possessor deserves its confidence. The authorization to sell a new remedy should be only for a limited time. "What a strange anomaly! While Watt in England, Fulton in America, whose labours have changed the aspect of the human race; while in France, Leblanc and Dizé, the inventors of the processes for making artificial soda; Berthollet, who has created the art of bleaching by chlorine; Achard, who has taught us to extract sugar from beet-root; Papin and others, who have

[a] Traité des Maladies Syphilitiques.

immortalized their names by valuable discoveries,—while these men, who with giant strides advanced human progress, have been rewarded with a few years' privilege, the authors of inventions of the most slender merit receive an authorization in perpetuity, which becomes a veritable patrimony to them and their descendants."

The person receiving an authorization to sell a new remedy should be absolutely prohibited, under pain of immediate forfeiture and other penalties, from advertising it, with any description of its medical properties, whether in the newspapers, or by placards, prospectus, or in any other mode. The author considers that imaginary diseases are created by the perusal of such advertisements, and mentions a case in his own family, in which death occurred from the effects of a purgative elixir imprudently exhibited on the faith of one of these deceitful prospectuses. Nor are advertisements necessary to inform the medical profession of the existence of such remedies; the medical journals are sufficient for this purpose. But it is to the non-professional reader that they are addressed, and he, supposing from their perusal that each disease has its special remedy, omits the important point of really ascertaining the nature of his disease, and never suspects that a medicine to be useful must be administered in doses apportioned to the period and changes of the malady.

The British public should take a hint from the answer which has been given by the defenders of the authorization system to all these arguments. It is, that there are more dupes abroad than in France, and that the exportation of these remedies is a source of national wealth. "But," replies M. Soubeiran, "the public conscience will arise and protest against such a thought, for in France profit does not justify iniquity." "Those who use such an argument," he continues, "have not retained any portion of our chivalrous and ancient Gallic blood They would demand that we should engage in an *opium war* to insure the sale of their noxious drugs!"

The secret remedies, the sale of which is authorized in France, are the pills of Belloste, the grains of health of Dr. Franck, the powder called Irroë's, the anti-syphilitic juice of Laffecteur, the ophthalmic pomade of the widow Farnier, the powder of Sancy, the biscuits of Ollivier, and the anti-dartrous pomade of Kunkel.

As a specimen of the absurdities which are published with the sanction of the Government, we may quote from the prospectus of the powder of Irroë, in which this remedy is said to

"cure all sorts of diseases," and is declared to be "good for all sorts of patients, and even for those who are in perfect health."

There is no mystery as to the essential composition of the biscuits of Ollivier; they consist of corrosive sublimate, combined with some protein compound. Yet it is on a Report of the Academy of Medicine that the Government has sanctioned the use of this dangerous remedy in the hands of a quack. "There is no assembly so learned," observes M. Soubeiran, "that it is not sometimes at fault."

The composition of the anti-syphilitic juice of Laffecteur, which is sold at an exorbitant price, has constantly varied. It ought to be nearly the same as that of the compound syrup of sarsaparilla of the Codex; but the pretended vegetable juice of Laffecteur at one time contained mercury, and Swediaur saw patients in whom it produced a violent and characteristic salivation. This statement reminds us of a compound of, we believe, corrosive sublimate, sugar, and water, which was largely sold in this country, some years ago, at thirteen shillings a bottle, under the name of De Velno's *vegetable* syrup. The powder of Sancy has lost its importance since the discovery of iodine; the pomade of the Widow Farnier is an ordinary ophthalmic ointment; the base of Kunkel's pomade is oxide of copper.

M. Soubeiran concludes his pamphlet by repeating his opinion, that legislation on the subject of secret remedies ought to revert to the decree of the 18th of August, 1810, to be applied in all its rigour; and that authorizations to sell should not be granted; but adds, that if the Government should, notwithstanding, decide on maintaining the system of authorized remedies, the permission to sell ought to be given only on the following conditions:—

The receipt to be made public.

The permission to be personal, and limited to a certain number of years.

The remedy to be sold only by pharmaciens, and on the authority of a physician's prescription.

A maximum price to be fixed for the sale of the medicine.

Advertising, with a description of the medical properties of the medicine, to be strictly forbidden.

The infraction of any of these conditions, or a change in the composition of the remedy, to be punished with forfeiture and penalty.

Having thus taken a rapid survey of M. Soubeiran's interesting and useful discourse, let us for a moment glance at the position of quackery in the British Islands. The revenue de-

rived by the Government from stamps upon patent medicines has averaged, as appears from the Table of the net amount of Inland Revenue, contained in that elaborate and authentic volume, Thom's Irish Almanac and Official Directory for 1853, during the five years 1847 to 1851, both inclusive, £30,350 per annum for Great Britain: the duty does not extend to Ireland. An additional income is of course obtained from the stamp duty charged on the numerous advertisements of these medicines, which disgrace the columns of many of our newspapers and journals, alike outraging decency and tending to the spread of immorality. Still, it is beneath the dignity, as it is decidedly contrary to the duty, of a Government to draw its revenue from so polluted a source: such a course could not properly be defended were the profit one hundredfold the paltry sum for the sake of which our national morality is compromised. But were we to descend to lower ground, and view the matter in a mercantile and financial aspect, we might prove that, in conferring on the sale of quack medicines the protection and sanction of the State, the Government is guilty of the shortsightedness so common to those who "hasten to be rich." We might ask, from whom is our national revenue derived? Undoubtedly from the working man. Is it then *prudent* to subject him, on whose health and strength we are dependent, to become the victim of unprincipled and designing men? Under the quack medicine system, a person suffering, suppose, from dyspeptic symptoms, the consequence, it may be, of a sub-acute or chronic inflammatory condition of the gastro-intestinal mucous membrane, will probably have recourse to some drastic cathartic, and, obtaining a temporary feeling of relief, will recur to it again and again, until he finally brings on a fatal illness; or, mayhap, being affected with an inflammatory condition of some portion of the organs of respiration, he may, by the use of a vile stimulant,—so-called "pectoral" nostrum,—establish a dangerous pneumonia, or with opiate wafers check the salutary secretion set up by nature as a relief to the congested organ. Yet these are probably not the worst instances which might be adduced of the effects of "secret remedies." On the high grounds, then, of duty and morality, and on probably the more touching one of true self-interest, we call upon our rulers to take M. Soubeiran's excellent little work into their serious consideration, and to apply to British legislation the principles therein set forth.

What to observe at the Bedside, and after Death in Medical Cases. Published under the authority of the London Medical Society of Observation. London: Churchill, 1853. Post 8vo, pp. 136.

In the year 1850, the Society by which the above small volume has been published was established in London, for the purpose of "promoting the advancement of accurate Pathology and Therapeutics by clinical and allied investigations, the value of which shall be estimated by the numerical method; and to exhibit the special advantages which may accrue to the science of medicine by the co-operation of several persons working on a uniform plan towards the elucidation of given medical questions." The list of ordinary members, the number of whom is restricted to twenty-five, contains the names of most of the rising junior physicians in the great metropolis, and affords a sufficient guarantee that the above important principles will be fully, fairly, and honourably carried out.

The object in printing this their first book is to afford not only to their own members, but to all medical men engaged in clinical observation, an outline of a plan for carrying on the investigation of disease both during life and after death, and reporting the results. To the Society its adoption insures uniformity, and thus the labour of analyzing and comparing clinical observations is greatly lightened; and to all physicians a reference to its pages will render their inquiries and reports more accurate than they otherwise would be, the chief defects therein, as is truly remarked in the Preface, arising from "forgetfulness in searching for all possible evidence of disease." The work is divided into two parts, entitled: I. Clinical Examination of a Patient; II. Examination of a Body after Death. The former includes the following sections: 1. The personal description and peculiarities of the patient in health. 2. The previous history of the patient. 3. The cause of existing disease prior to the patient coming under observation; and 4. Condition of the patient at the time of observation. Of the latter, the sections are: 1. Points to be ascertained and noted prior to commencing an examination; and, 2. Points to be noticed during an examination. Each section is further subdivided minutely, in order that no question, whether important or apparently unimportant, should in any case escape attention. The following extract, being the first section of the second part of the work, illustrates the style and mode of "getting up" of the volume:

§ I.—Points to be ascertained and noted prior to commencing an Examination.

§ I.

329. *Name.* — Name.

330. *Date of death,* presumed or ascertained. — Date of death.

331. *Date of examination :*—" in a medico-legal case, precise time (local time) when called to see the body."* — Date of examination.

332. *Weather*, from the date of death, to that of examination. —*Temperature* to which body has been exposed. — Weather.

333. " *Medium in which body has lain* from date of death to that of examination;—in earth, clay, sand, gravel, mud;—in water, salt, fresh, stagnant, running, turbid (from earthy, vegetable, or animal matters?);—in gas, carbonic acid, sulphuretted hydrogen, &c. (noting circumstances under which it has been exposed to the above)." — Medium in which laid.

334. " *Substance on which body has lain.*" — Substance on which laid.

335. *Posture of body* between death and examination;—on back, on face, &c.; length of time it has lain in that posture. — Posture.

336. " *Position of body* in relation to the room, stairs, &c.; to articles of furniture;—relation of parts of body to the above.—If found hanging, note posture of body, and how much touches ground." — Position in relation to other objects.

337. " *Odour* in the room, at different parts of it; near body or at a distance from it?—Odour about body itself before stripping, after clothes have been removed (of poisons, of putrefaction, &c.)." — Odour.

338. " *Clothing on body* or lying near it (noting special articles).—Nature and amount of covering; its arrangement; evenly or in creases?—*Vomited matters* upon them, on what part? examine for poisons (139).—*Blood stains* on clothes, on which articles? chemical and microscopical examination of stains;—part of clothing thus marked, so as to indicate posture of individual at time blood flowed over clothing;—blood appearing to have been sprinkled, as by jets from an artery, over the article of dress; smeared, generally; soaked through; stain chiefly outside or inside the garment?—does stain correspond with a wound in the dress or body?—marks of a bloody hand on clothing, at what parts? of one or both hands?—*Stains of other kinds;* of semen; of discharges; microscopical examination of stains (show absence of starch);—of acids.—*Wounds of dress;* their situation; size; cut or torn?—corresponding or not with wounds on body?—bloody or not? side to which blood chiefly applied.—*Dress blackened or burnt,* extent and situation of injury. —*Position of bed-clothes*, if body is in bed." — Clothing— vomited matters. blood-stains. other stains. wounds of dress. burns of dress. position of bed-clothes.

339. " *Degree of manipulation* to which body has been exposed;—removal from the place at which death occurred, or where it was first found; the manner in which this was effected, lifted by hands, or feet, or both, &c." — Manipulation.

340. " *Cord round neck :*—its precise characters;—mode in which placed round, and its exact situation;—situation of knot;—knot single or double; firmness of each knot.—*Umbilical cord;* if round neck or body, note in what manner it is disposed, its condition, amount of stretching, &c." — Cord round neck. umbilical cord.

* As in Part I., the several points for observation included within commas have especial reference to medico-legal inquiries.

341. "*Articles about body:*—furniture and walls;—spots of blood on them, their exact situation, size, form, and direction; shining or dull.—Weapons (628).—Dishes, plates, or articles of food.—Bottles, corked or not.—Vomited matters, their exact situation, characters (139).—(Preserve and examine chemically and microscopically any of the above which may throw light on the case)." Articles about body.

342. *Faeces and urine*, found under body. Fæces, etc., under body.

343. "*When body is exhumed*, note condition of coffin as to soundness.—Examine soil, if necessary, for presence of metallic poisons—e. g. arsenic or copper." Condition of coffin, etc.

We regard this little book as a most useful and important contribution to medical literature, and we therefore think that the Society deserves the thanks of the profession for its publication. It is stated in the Preface, that the form of arrangement, which had been framed by Dr. Walshe, was expanded and altered in various parts by a committee to whom it was referred, and that the supervision of the whole was intrusted to Dr. Ballard.

Moral-Sanatory Economy. By Henry M'Cormac, M. D., Consulting Physician to the Belfast General Hospital, &c. Belfast: 1853. 8vo, pp. 150.

The Sanitary State of Belfast, with Suggestions for its Improvement. A Paper read before the Statistical Section of the British Association, at Belfast, September 7, 1852. Pamphlet, pp. 31, with seven Maps and Plans.

On the Connexion of Atmospheric Impurity with Disease. A Paper read before the Statistical Section of the British Association, at Belfast, September 7, 1852. Pamphlet, pp. 7.

It is a trite and vulgar idea, yet one which has recently obtained the sanction of the great authority of England,—the Times newspaper,—that the medical profession has a direct interest in the propagation of disease and the continuance of those causes which produce ill health among the people. That ignorant and uninstructed persons should readily form such an opinion is not to be wondered at; but when we find it adopted and echoed by those who should and do know better, we are at once inclined to think how true is the old saying, "man is born to be an ungrateful animal." We have, in truth, no wish to laud our profession or its members; it has never been our habit to do so; but such injustice must plead our apology

if we recall to notice that, of all the learned professions, ours alone devotes the energies of its youth and the experience of its age, time, and talent, bodily labour and mental toil, to relieve the sufferings of the poor in disease, and lessen the pangs which attend the sick-bed of the pauper, without direct fee or reward. Who, in all ages and in all times, have so strenuously devoted themselves to devise means calculated to improve the public health, and to prevent or remove all causes injurious thereto, as medical men? We need not refer to history in proof of this; the present day affords evidence patent to all; witness the Sanitary Congresses abroad, the Sanitary Societies at home; the attempts made to remove nuisances from, and give lungs to, the overgrown cities and towns of the British Islands.

But we shall not tire our readers by reiterating facts to them well known: a reference to one case, that of Mr. Walker, shall suffice as an example of disinterested exertion in the cause of public health by a member of our profession, and of ingratitude on the part of a Nation. This gentleman, satisfied of the great injury to the health of dwellers in towns, which was occasioned by the common practice of burying the dead in the midst of the habitations of the living, devoted his time, his energies, and his limited purse, to the prevention of this practice, and in an endeavour to render extra-mural interments compulsory. After years of unremitting labour, he at length succeeded in compelling the Government to admit the truth of his views, and, as regarded London, to induce Parliament to enact a law to prevent further interments within its precincts.

This first step was at least a recognition of the correctness of the principle so urgently worked out by Dr. Walker, and an admission of its importance, yet to him no reward came; the public gained, but he lost. As we informed our readers in the Notices to Correspondents, issued in our number for November, 1850, a Committee was formed in London with the intention of presenting him with a national testimonial for the services which he rendered to sanitary reform, and to recompense him in some degree for the *official neglect* with which he was treated. But this Committee has, we were grieved to learn lately, been compelled to abandon the object for which it was instituted, in consequence of the want of support from the public as well as the Government.

These reflections have originated from the appearance on our table of the works on questions of sanitary economy, the

titles of which we have given above. Two of them, as may be perceived, were called forth by the presence of the British Association in Belfast last autumn, and serve as excellent models for those engaged in similar investigations. The pamphlet of Dr. Malcolm enters with some minuteness into an account of the sanitary defects of Belfast, and contains suggestions for their removal, and the improvement of the town as regards the health of the population. The subject is, of course, one of purely local interest, unless, as when on the occasion which induced the author to make his observations public, crowds of strangers are induced to visit the locality, and then it acquires a sort of general importance. The matter is well and ably argued, and the truth of his observations as regards some of the nuisances—especially that termed the Blackstaff—was testified to by nearly every visitor at the meeting of the Association; for our own part, we have not yet forgotten the abominable and sickening odour of that filthy open ditch running through one of the fashionable districts of the Irish northern metropolis.

Dr. M'Cormac's volume on Moral-Sanatory Economy would deserve, did our space permit, more than a passing notice. Conceived in the true philosophic spirit of good-will and charity towards man, written in a quaint Baconian style, and abounding in learned facts drawn from the rich store of the author's mind, we strongly recommend it to both the profession and the public. The work bears for its motto, "Education, Health, Order, Progress, Competence," and treats, in twelve chapters, of Female Degradation, Employment, Education, Household Culture, Criminal Management, Physical Training, Clothing, Food, Drink, Air, Drainage, and Prevention of Disease. As a specimen of the book, we cannot resist making the following extract from the chapter on Drink:—

"Water, assuredly, is among the cheapest and best of all drinks. Coffee, tea, cocoa, milk, wine, ale, owe their existence as beverages, and many of their good properties, to it. With all respect to the good Teetotallers, however, it would, I conceive, be better to convert apples into cider, than to give them to swine, *Temperance Chronicle*, 1850, p. 136. It is greatly to be regretted that wine is not more accessible to those who have so much need of it. The vintages of Spain, and even of France, as Cooke and others relate, perish for lack of consumers; the produce of the Indies is laden with restrictions, while poor British and Irish artisans and labourers faint unrefreshed over their heavy toil, or are consigned to pot-house orgies and gin-palace refections. The community are too much excluded from tea, coffee, chocolate, wine, malt liquors, conducive, in their purity, at once to health and temperate enjoyment. The privation, unhappily, is a premium, at once direct and indirect, upon excess.

Wine, irrespective of its cheerful natural solace, is admirable as a restorative in and after fevers, and those states of exhaustion to which multitudes in this anxious, striving existence, are liable. Doctrines which denounce alcoholic drinks as poisonous, Dr. Thomson has justly remarked, 'are at variance with reason, and unsupported by medical science, else keenly alive to the evils of intemperance.' The real seat of temperance is the soul! Amend men's habits, increase their comforts, enhance their moral and intellectual enjoyments, and we oppose an unassailable barrier to the dram-bottle. Nothing, except the general improvement of their nature, as Channing avers, can fortify the poor against excesses which make them scourges alike to themselves and to their race. He would conciliate their self-respect, the loss of which is their chief peril,—the chief peril, indeed, of us all."

"How deeply is it to be regretted that the opulent classes know so little of the poor, that poor of whom, as regards things temporal and eternal, the rule of life has constituted them guardians and protectors. What must be the condition of workers, who, by tens and hundreds of thousands, can filthily squander their children's means, and virtually sell their own souls? Light, unadulterated ales and wines refresh, but do not intoxicate. It is quite otherwise, however, with liquors drugged, not to refresh, but to intoxicate! Each cask of fiery spirit, falling into the hands of persons of untrained souls and untamed animal impulses, may very well be esteemed an epitome of the crimes and excesses that beset untutored humanity, when goaded by a passion, the passion for strong drink, which, as much as any other, needs the potent stay of habitual self-control. Some trifling impost, some two pence or four pence a gallon, on foreign wines, with corresponding reductions on hops, malt, tea, cocoa, coffee, would introduce these desirable refreshments into the houses of working men, and vastly increase the demand for British and Irish produce at home and abroad. Why should there not be a flask of wine or a jug of ale on every poor man's table, to the solace of the toil-worn artisan and labourer, the child-nurturing mother? If intemperance have slain its myriads, the absence of the temperate use of wines and ales, coupled with material destitution and decay, has also destroyed myriads. There are multitudes, as every medical man is well aware, in whom the healthful solace of pure vinous drinks, in conjunction with adequate solid nourishment, would arrest the else certain progress of disease and death. Those who so erroneously, although conscientiously, insist on the total disuse of wine, should peruse Krummacher's 51st Parable on the grape, *Der Wein*, *Essen*, 1850. 'As a refreshment, when the vital powers are exhausted, a protection against transitory organic disturbances, wine is surpassed by no product of nature or art:' *Liebig's Letters*, p. 445."

In the small pamphlet by Dr. M'Cormac, the title of which we have also given above, the author enforces specially the importance to health, and the necessity for warding off disease, of

pure air both within doors and without. It forms a useful supplement to the volume just reviewed, putting prominently forward the chief injuries which arise from atmospheric impurity.

An Essay on the Poison of the Cobra di Capello. By JOHN COCKLE, A. M., M. D., &c. London: Highley. 1852. Pamphlet, pp. 32.

THE fatal accident which lately occurred, from the bite of a Spectacle Snake, to one of the keepers in the gardens of the Royal Zoological Society of London, has attracted a very general attention, on the part both of the profession and the public, to the nature of the subtle poison, which proves nearly as quickly fatal as a flash of electricity. At ten minutes past eight in the morning the unfortunate man, Gurling, was bitten in the nose by this venomous serpent, the Cobra di Capello of naturalists, and in one hour he was a corpse, notwithstanding the persevering use of the most judicious measures to restore the sinking of the vital powers.

Dr. Cockle's object, in his short essay, is to point out the peculiar influence of this animal poison on the living system, and "to inquire how far the symptoms it produces therein can be reconciled with the hypothesis of a decomposition of the blood." In the Preface he thus states the conclusions at which he has arrived:—

"By investigations which offer a fine example of induction, Liebig has shown that arsenic produces its fatal results by preventing those destructive changes of the solids and fluids of the body which are essential to life. There are other poisons which seem to have the effect of accelerating those changes to an extent inconsistent with the performance of the vital functions. It might, I am inclined to think, be contended with success that the venom acts in this manner. The cobra poison and arsenic would thus be distinct types of two classes of poisons, the *septic* and the *anti-septic*."

The author concludes his observations with some remarks on the local and constitutional treatment, which, if his views are correct, would be adapted for similar cases. The pamphlet is a very interesting one for those engaged in physiological studies, being well and clearly written.

PART III.

MEDICAL MISCELLANY.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

SESSION 1852–53.

First Meeting, Saturday, 27th of November, 1852.

An Introductory Address was delivered by the President of the King and Queen's College of Physicians (Dr. Montgomery).

Dr. Henry Kennedy then read a paper on *Tympanitis*, as a special symptom of disease. He divided the subject into the acute and chronic forms; and detailed a case of the latter occurring in a man, where a tumour in the abdomen from this cause was supposed to arise from organic disease. This tumour suddenly disappeared while the patient was in a bath.

He then entered at some length into the consideration of what he termed acute tympanitis, and showed that the presence of this sign, which could be so easily detected, was of much consequence in the treatment of all those diseases in which it occurred. Dr. Kennedy especially alluded to fever, erysipelas, diffuse inflammation, and puerperal fever; and at some length he proved that when it occurred in any one of these diseases, the proper line of treatment was the stimulant plan, to the exclusion of all blood-letting, and even mercury. In conclusion, he drew attention to a recent Paper in Guy's Hospital Reports, where a series of *fatal* cases of puerperal fever were given, and in every one of which no other treatment but local bleedings with calomel and opium was used. He thought this sameness of treatment was one which might very fairly be called in question, and the results in the cases given spoke for themselves.

Dr. Atthill (Assistant to the Rotundo Hospital) then read a paper upon *the induction of premature labour in cases of deformed pelvis.* He drew the attention of the Society to the old methods of induction, and enumerated the various objections to each of these modes. He then detailed a case in which the douche bath (after the manner

of the Vienna Lying-in Hospital) was successfully used. The case was that of a woman four feet and a half in height, and greatly deformed from angular curvature of the spine, the result of caries of the vertebræ, from which she had suffered when twelve years old. The curvature included the last dorsal and all the lumbar vertebræ; and there also existed an appreciable diminution in the pelvic space. In September, 1849, she was admitted into the Rotundo Lying-in Hospital for her first confinement, when it was found necessary to lessen the head, after a rather protracted labour. In September, 1850, she was again admitted, and this labour was but a repetition of her first. It was then explained to her that she could not give birth to a living child at full term, and she was recommended that, if she again became pregnant, she should come into hospital when she was seven months gone with child, and submit to the induction of premature labour. Accordingly, in June, 1851, she again presented herself in the seventh month of gestation, but before any steps could be taken her husband removed her, having been told that if she submitted to any operation she might die: so that she was lost sight of until the 26th of August following, when she was brought into hospital in strong labour, and again for the third time the crotchet had to be used. On being discharged after her recovery, the necessity of her presenting herself at the termination of the seventh month (should she again become pregnant), was strongly urged upon her; and she acted according to this advice, for she came to the hospital on the 10th of September, 1852, being seven months pregnant. It was now determined to try Kiwisch's method of induction—the douche bath. The apparatus used in this case was a tin vessel, capable of containing two gallons of water, and to this was affixed a flexible tube, furnished with a stop-cock, terminating in a bone nozzle about five inches in length. The vessel was raised about five feet above the bed on which the patient lay supine, the pipe of the tube was introduced into the vagina, the stop-cock turned, and the stream directed against the os uteri by means of the index finger inserted along with the nozzle. Saturday, the 18th of September, was the date of the first application, and even this seemed to produce a marked effect, for, on examination immediately after, the os uteri felt soft and relaxed. The douche was repeated, morning and evening, regularly, until the following Friday (except on Wednesday night, when the tube by some accident got out of order). After the second application, the os began to dilate, and continued to increase a little in size on each application, until after the sixth douche, when it had attained the magnitude of a half-crown, but then it ceased to enlarge. On Friday afternoon, having been subjected twelve times to the douche, she complained of pain in her back, and asserted that she felt certain her labour was approaching. Next morning, at 11 o'clock, the pains came on regularly, though feebly; at 7, P. M., the membranes ruptured, the os being fully dilated, and the pains grew most powerful; the head gra-

dually descended into the pelvis until 9 P. M., when it almost rested on the perineum, but, although uterine action was strong, it ceased to advance further; and at 11 o'clock, no progress having been made for two hours, she was delivered by the forceps (while under the influence of chloroform), of a small, living female child about the seventh month. The two first days it had to be spoon-fed, but afterwards it took the breast freely. The mother recovered without the slighest drawback, and she and the child went out well on the ninth day. Dr. Atthill said, that, comparing this case with those given by Dr. Arneth of Vienna, it appeared that it required the exact number of douches (viz., twelve), to bring on labour, which he found to be the average. The height from which the water flowed was, however, much less than that which he directed; and Dr. Atthill consequently considered that any great height was unnecessary.

The result of this case Dr. Atthill thought most satisfactory, and to the method of induction he considered there could be no valid objection, the worst result being failure, and that this was very unlikely to occur, for, out of the six cases recorded by Dr. Arneth, in only one did the douche fail. Dr. Atthill preferred this mode of induction to any of the other plans recommended by authors, because no possible injury could be done by the employment of the douche bath to either mother or child; and in its application it was simple in the extreme. He concluded by remarking, that, since writing the foregoing paper, he had seen in the Lancet the details of a case in which the douche had been successfully applied by Dr. Tyler Smith of London; and the only difference that existed in Dr. Smith's case from that just related was, that alternate douches of hot and cold water were used by Dr. Smith; and that this might have been the reason why only five applications were necessary: but that this fact was by no means proved, for in one of Dr. Arneth's cases only two were required. Dr. Atthill considered, however, that it would be worth while to test the fact by further observations.

Dr. CHURCHILL remarked, that Dr. Simpson of Edinburgh was in the habit of using effectually a simple form of syringe for such purposes, which he would consider preferable to the syphon douche, as being more simple and more easily applied; it generally brought on labour after four, five, six, or eight applications.

Dr. M'CLINTOCK stated, that the only objection which, in his opinion, could be urged against this method of inducing premature labour was, the facility, certainty, and safety with which it could be made use of, for criminal purposes, were it generally known to the public.

SECOND MEETING, SATURDAY, 17TH OF DECEMBER, 1852.

Dr. CHURCHILL read a paper on *occlusion of the os uteri*, whether congenital or acquired, distinguishing, in the latter class of cases, partial from complete occlusion.

The author illustrated each variety by cases, and entered fully into the treatment of each class; but as the paper will be published *in extenso* hereafter, it is unnecessary to enter more fully into details at present.

Dr. Edward B. Sinclair (Assistant to the Rotundo Hospital) read the following report of a *Case of Extra-Uterine Fœtation.* Catherine C., aged 36, from the country, was admitted into the chronic wards of the Rotundo Lying-in Hospital, on the 12th of May, 1852. She stated that she was the mother of four children, all of whom were alive, the youngest being seven years of age; that since the birth of her last child her menstruation had been regular up to the Christmas prior to her admission, when "it stopped," and had not since returned; that in consequence of the arrest of menstruation she fancied herself pregnant, but that, save this one, she had none of the ordinary symptoms of that state; that a few weeks after her last menstruation she experienced some pains of an obscure nature in the loins, not localized to one side in particular, and a sense of weight low down in the pelvis; and that soon afterwards she became sensible of the existence of a tumour in the lower region of the abdomen, and that this tumour appeared to increase in size gradually; that she also suffered some annoyance from a discharge from the vagina, which was sometimes profuse, and of a yellowish colour; moreover, she had frequent desire to pass urine, and some tenesmus. She frequently had recourse to medical aid in the neighbourhood of her residence without relief, and she consequently came to town for advice, being now particularly anxious about herself, inasmuch as she had latterly suffered considerably from constipation, together with great difficulty in evacuating the bladder; and in addition to these distressing symptoms, the pains, which before were only occasionally felt, and were bearable, now came on in paroxysms of great severity.

This woman on her admission presented an appearance rather healthy than otherwise, being neither of a malignant nor cachectic aspect. Upon examination the lower region of the abdomen was found to be considerably fuller than natural, and especially prominent towards the mesial line, and to the left side, in consequence of a tumour which apparently occupied this region, and extended itself almost into the left iliac fossa; that portion of the tumour nearest the mesial line was seemingly the uterus, having the shape of that organ, but increased in size to at least three times its natural bulk; it occupied a position above the brim of the pelvis, and was displaced so that its anterior surface, instead of having an aspect downwards and forwards, looked upwards and forwards, evidently pushed in this direction by something occupying the pelvic cavity, and which could be felt encroaching above the brim a little way into the left iliac fossa. On examination by the vagina, the os uteri could not be reached, but a long, firm, irregular tumour was found to occupy nearly the entire pelvic space, pushing downwards and forwards the posterior wall of the vagina, by which it was covered, and giving a

dense and semi-elastic sensation to the touch; motion was conveyed to it slightly when the tumour considered to be the uterus was moved; a catheter was passed, and it was found necessary to push it to its utmost length before it could be made to enter the vesical cavity.

On examination by the rectum, the tube of that intestine was found to be encroached upon, and its course altered in a zigzag direction. By this examination, the most depending part of the tumour could be more readily felt; and Dr. Shekleton remarked, that at this portion a sensation was conveyed to his finger, as if a small fœtal head was pushing the soft structures downwards, and he deemed it probable (but by no means decided) that this was a case of extra-uterine fœtation. A prolonged stethoscopic investigation was now instituted, but nothing was thereby elicited, which could throw additional light on the case; the areolæ were also examined, but could not have been considered as affording any evidence to direct our diagnosis, seeing that their appearance was only such as would have been expected in a woman of very dark complexion (she was a brunette) who had borne four children: there was no secretion from the mammary glands. Since the night prior to her admission, she had suffered from severe pain, which had remained constant, with recurrences of periods of increased severity; she was also tired after her journey, and wearied from want of sleep; she was consequently put to bed, and (her bowels having been freed) a full opiate was administered.

Next day (13th) it was found that she experienced no good effect from the opiate; the pain had become excruciating during the night, compelling her to rise from her couch repeatedly, and walk about the ward in a bent position; her pulse was rapid and full, and her belly very tympanitic; there was pain on pressure over the surface of the abdomen, but the pressure, when firmly applied, could be borne; the tongue was somewhat furred and rather dry; but the most distressing symptom was the pelvic pain. Stupes were applied, and turpentine and oil enemata administered, with a view to lessen the tympanitis, but with only slight benefit; the long tube was gently passed, and even that had but little effect in relieving the abdomen from the flatulent distention; we then tried to get her under the influence of opium, of which we gave her repeated doses in the solid form.

On the 14th we were informed that the night had been passed just as the previous one; she presented pretty much the same symptoms as on the day before, but she was much more exhausted from want of sleep, and unremitted suffering. All we could do was to endeavour to keep her up with mild nourishment (of which she partook sparingly), and to try and get her a little rest.

The night of the 14th was a repetition of the night of the 13th; but on the morning of the 15th I was called up by the nurse, who said, that "she had taken a sudden turn for the worse, and was fainting." I found her with a countenance most anxious and deadly

pale; she was in a state of collapse, and her skin was covered with a cold, clammy sweat. The usual methods were resorted to under such circumstances, and her pulse returned very feebly; her stomach now became irritable, and she slowly sank, death releasing her from her sufferings on the evening of the 15th, a little before eight o'clock, having endured agonizing torture, from the moment of admission, up to the time of the sudden collapse, an interval of sixty-eight hours. During this long period of suffering, there were times when the pain was more severe; and during these paroxysms of increased severity, the hand placed over the tumour, or the finger in the vagina, could detect nothing like action, and no bearing-down efforts were made during the whole of her illness.

Upon post-mortem examination, no traces of peritonitis could be discovered; some blood was extravasated near the sigmoid flexure of the colon, just as that intestine dipped into the pelvis, but by no means a large quantity; a tumour of considerable magnitude was found to occupy the pelvic space; the uterus was increased in size to at least three times that of the virgin organ, and the structures on either side of it were matted together by old adhesions; the position of the uterus was changed; it lay across the pelvis in the conjugate diameter, its fundus corresponding to the sacro-vertebral angle, and its os situated above and behind the pubis; the organ was completely out of the true pelvis, and its anterior surface, as before described, had an aspect forwards and upwards; in a situation near the left sacro-iliac synchondrosis was a small rent beneath the clot, and with the finger it was found that this rent led into a cyst, and that the cyst contained a fœtus of considerable size; the contents of the pelvis were removed as carefully as possible,—no easy matter, from the numerous adhesions of adjacent structures.

The sac was of considerable size, and the relations of the viscera thereto, were as follows:—The roof of the cyst was formed by the posterior surface of the misplaced matrix and the uterine appendages, matted by lymphy deposits to the neighbouring structures. Posterior to the sac was the rectum, and anteriorly and inferiorly the posterior wall of the vagina. In the left iliac fossa, over the uterine appendages, was a large deposition of fat, which accounted for the apparent partial occupation of that region by the tumour; on this side (the left) could be found the Fallopian tube and round ligament, also the ovary, but this latter organ was altered in structure, its stroma being changed into a yellowish-brown pultaceous mass, and its size much increased. On the right side, a portion of the Fallopian tube and round ligament was found; there was no trace of an ovary, but instead, a large fibrous cyst was seen in the position which ought to have been occupied by that body. The uterus was, as before mentioned, increased much in size, thickened as to its walls, and, on being cut into, a perfect decidua was found lining its cavity; there was no operculum, neither were any of the glandulæ Nabothi observed to be in a state of distention, either around the os or on the cervix. A careful dissection showed that the peritoneum was

spread over the roof of the cyst on either side of the uterus, whose posterior surface was stripped of that membrane, and the organ itself tilted rather to the left side, not occupying *directly* the mesial line. The fœtus was undoubtedly in the fifth month, and well formed, having a cord of some length leading to its placenta, which was of considerable diameter and thickness, and attached to the fibrous portion of the cyst on the right side. The fœtal head was inferior, and presented at that portion of the tumour which was most depending, pushing downwards and to the right the rectum, where Dr. Shekleton fancied he recognised it by the finger.

From there being no trace of the ovary on the right side, save the fibrous cyst; from the attachment of the placenta to this part of the general sac; and from the pushing of the uterus not only completely out of the pelvis, but also to the left side,—I am led to conclude that it was the right ovary that was engaged in the conception, and that the development progressed in this organ, increasing in a direction downwards; that when the ovary was over-distended, or perhaps ruptured, the layers of the broad ligament were opened out, the posterior layer being pushed backwards to the anterior surface of the rectum, to which it was glued; and that the development went on *between* the layers of the broad ligament. I am borne out by the fact of the peritoneum forming the roof of the cyst on each side of the uterus, and the posterior surface of that organ being denuded of this membrane.

In this case, the circumstances that we had to lead us to a correct diagnosis were;—the upward displacement of the uterus, and its partial increase in volume; a large body occupying the pelvic space, and one particular portion of that body conveying a vague impression to the finger, similar to that which a fœtal head would yield; and, added to these, we had some equivocal signs of pregnancy, such as arrest of menstruation, and sympathetic irritation of the bladder and rectum; but then we had no stethoscopic phenomena to guide us; although a small fœtal head *was* said to have been felt, yet a most experienced finger (Dr. Shekleton's) could not pronounce with *certainty* as to the nature of the body conveying that impression. The symptom of pain, in the early state of the case, was not localized to one side in particular, and it had latterly become constant, referred to the entire pelvic and lumbar regions, and no fœtal motion had been felt at any time. Therefore, although we thought it highly probable that this was a case of extra-uterine fœtation, we were by no means confident in our diagnosis. The pain in this case (and indeed in the generality of such cases) must, I should say, be looked upon as the result of tension of the cyst: here the tension, I presume, had arrived near its acme on her admission, when the pain became constant: and the date of rupture should be laid to the morning of the 15th, when I was called to attend her in her sudden collapse.

From the history of this woman's case and the post-mortem appearances, we must arrive at the conclusion that death was not the

immediate result of the hemorrhage, but more that of the shock occasioned by the rupturing of the cyst.

It is melancholy to reflect of what little avail treatment can be in such cases; arising, in the first place, from the difficulty in arriving at a positive conclusion; and, in the next (supposing our diagnosis to be certain), the difficulty of determining upon what indication we are to act. And the question arises, whether, with the data we had to guide us in the present instance, and taking into consideration the urgent symptoms of the case, we should have been justified in making an incision into the vaginal covering of the tumour, with a view to delivery? And again, whether, in this instance, supposing, in addition to the evidence we were possessed of, stethoscopic examination proved the existence of a fœtus,—upon the symptoms becoming urgent indicating approaching rupture, we should have been right in proceeding towards delivery by a vaginal operation, or should we merely have attended to the alleviation of urgent symptoms, and leave the patient to her fate?

Electro-Physiological and Pathological Researches on the Individual Action and the Uses of the Muscles moving the Thumb and the other Fingers. Memoir presented to the Academy of Medicine of Paris. By Dr. Duchenne (de Boulogne), Laureate of the Institute of France, &c. &c.

(*Continued from Vol. XIV.*, p. 491.)

PART II.—ELECTRO-PATHOLOGICAL RESEARCHES.

Although electro-physiological experiments have allowed me to determine the action of each of the muscles moving the thumb and the fingers, I must confess that with those data alone, and without pathological observation, I would have been unable to form an accurate idea of the important functions these muscles are called on to perform with reference to the uses of the hand, and principally the natural attitude of the fingers and thumb. These I will now endeavour to demonstrate in a series of propositions supported by pathological facts.

A.—MUSCLES MOVING THE FINGERS.

I.—*Pathology, as well as electro-physiological experiment, shows that the extensors of the fingers are not the only muscles producing extension of the two last phalanges.*

When I undertook my electro-pathological researches, I had already noticed, that individuals in whom the muscles of the fingers were paralyzed in consequence of lead poisoning were still able to extend the two last phalanges. I had, therefore, contrary to anato-

mical data, arrived at the conclusion contained in the propositions I have just laid down, and the truth of which I have demonstrated publicly on more than a hundred individuals, without meeting with one exception.

The following is the experiment, showing extension of the two last phalanges of the fingers, notwithstanding the paralysis of the extensores digitorum, to be quite as complete as in the normal state. It is known that, in consequence of the paralysis of the extensors of the fingers, the first phalanges are bent at right angles on the metacarpus, and that in this attitude extension of the last phalanges appears to be very limited, principally if the wrist be also flexed, owing to paralysis of the extensors. Now if, having maintained, straightened out as much as possible, the first phalanges and the wrist of the patient, we tell him to bend and extend alternately the two last phalanges, we see that the latter, after having been flexed, unfold and extend as fully, and with as much strength, as if paralysis of the extensors did not exist. M. Tanquerel des Planches has, in his Treatise on Saturnine Disease, written that, owing to paralysis of their extensors the fingers cannot perform the slightest movement of extension[a]. He is right if he alludes to the first phalanges; as to the last phalanges, he has been deceived by appearances, as shown by the preceding experiment.

II.—*It is owing to the integrity of the interosseous and of the lumbrical muscles that extension of the two last phalanges is preserved, notwithstanding the paralysis of the extensors.*

Before offering a demonstration of the above proposition I must remark, that pathologists may have been induced to believe that there existed paralysis of the interosseous muscles in cases where the extensors of the fingers were solely affected, because in those cases separation of the fingers is difficult and very limited.

I will now proceed to prove, by a very simple electro-pathological experiment, that it is in reality by the means of the interosseous and lumbrical muscles that extension of the two last phalanges is effected when the extensors of the fingers are paralyzed; and with the view of rendering the demonstration more complete I shall select for example saturnine paralysis of the extensores digitorum. Let the electrical excitation be directed on an extensor muscle of the fingers so affected, and it will be seen, that while this muscle does not contract, the phalanges undergo no movement whatever[b]. But if afterwards the interosseous and the lumbrical muscles are excited in their turn, the two last phalanges are energetically extended, whatever be the degree of extension in which the first phalanges have been placed.

[a] Vol. ii. p. 49.

[b] I must remind the reader that I have shown in another work that in saturnine paralysis the paralyzed muscles have totally or partially lost their electric contractility, and that I have established thereon a diagnostic sign of this paralysis.

III.—*Paralysis or atrophy of the extensors of the fingers, renders flexion of the two last phalanges difficult and incomplete. This induces great functional derangement in the movement of the fingers in writers, painters, draughtsmen, &c.*

Consequent on paralysis of the extensors of the fingers, and principally when this affection is attended with paralysis of the extensor muscles of the wrist, flexion of the last phalanges becomes difficult, if not impossible. In these cases the wrist is constantly flexed on the fore-arm, and the first phalanges are inclined on the metacarpal bones. If the patient closes his hand the second phalanges become flexed on the first, and the third phalanges remain extended; the ends of the fingers come into contact with the middle part of the thenar and hypothenar regions. Flexion of the second phalanges is even effected without strength, as is easily discovered on telling the patient to squeeze our hand.

The impossibility or the difficulty of bending the third phalanges, and the weakened condition of the flexor movement of the second phalanx, are, in these cases, solely the result of the shortening of the flexors, owing to the position of the wrist and of the first phalanges. For if the wrist and the first phalanges be maintained in extension, the patient becomes able to bend his last phalanges on the second, as in the normal condition, and the hand closes with greater strength by the contraction of its two flexors. These pathological facts confirm the theory of the mechanism of the flexor movements of the two last phalanges of the fingers, movements requiring physiologically the extension of the first phalanges by the synergetic contraction of the extensores digitorum.

Paralysis of the extensors of the fingers does not prevent patients from writing a small hand. They can, if required, trace letters from four to six lines high, but then they experience considerable difficulty. When draughtsmen, painters[a], &c., lose the use of their extensores digitorum muscles, they lose all possibility of pursuing their profession, because they can no longer trace long lines except by the movements of flexion or of extension of the wrist or fore-arm.

The knowledge of the mechanism of movements performed by the phalanges of the fingers in directing the pen, the brush, or the pencil, &c., sufficiently elucidates these pathological phenomena; for it may be recalled to mind that my electro-physiological experiments have shown that in the adult the line traced by the fingers holding the pencil, the pen, &c., the greatest length of which is, on an average, an inch and three-quarters, is the result in great part of the movement of extension or flexion of the first phalanges. It is evident that if the first phalanges remain motionless in consequence of paralysis of the extensors, the length of the line will ne-

[a] I do not allude here to the case of house-painters, who are still able to hold their brush with a solid hand, and can use it with dexterity, provided the extensors of the wrist be preserved.

cessarily be very limited. It is for this reason that individuals deprived of the action of their extensors are still able to write a fair, small hand, while painters and draughtsmen are no longer capable of managing the brush or the pencil.

IV.—*Paralysis or atrophy of the superficial and deep-seated flexors does not prevent flexion of the first phalanges, which is in such cases effected with energy by the interosseous and lumbrical muscles.*

My electro-physiological researches have shown that these muscles have only a slight action on the first phalanges, but that the interosseous and lumbrical muscles bend the first phalanges with great energy. This fact is still better demonstrated by pathology.

A man named Viotte, in the Hospital de la Charité, M. Briquet's ward, had lost the use of many muscles through progressive muscular atrophy. When this patient performed no voluntary movement, that is, when he was in a state of repose, the two last phalanges of his fore-finger and of his middle-finger retained an extended attitude so far as to be thrown back towards the first phalanges, the latter being, on the contrary, half flexed on the metacarpus. The movements of voluntary flexion and extension of the first phalanges of the index and of the medius finger were preserved, but flexion of the two last phalanges was lost under the influence of voluntary, as well as of electrical excitation. To judge of the power of the interosseous and lumbrical muscles as flexors of the first phalanges, I placed between the patient's thumb and two first fingers my own fingers gathered up together, and told him to squeeze them hard, and I then felt my hand pretty strongly pressed.

V.—*Paralysis or atrophy of the interosseous or lumbrical muscles is followed by almost complete loss of extensor movement in the two last phalanges, and of flexor movement in the first.*

It has been shown by my electro-physiological researches that the interosseous and lumbrical muscles act powerfully on the three phalanges of the fingers by bending the first and extending the two last. On the other hand, pathology has just confirmed the facts,—that the loss of power of the flexor and extensor muscles is the occasion of no derangement in the exercise of these same partial movements of the phalanges. We should also be justified in drawing from those electro-physiological experiments the conclusion that the extensors and the flexors of the fingers can replace to a certain extent the interosseous and the lumbrical muscles when the latter become atrophied or paralyzed; but I will show, on the contrary, by means of pathological facts, that the physiological action of the extensors on the two last phalanges and of the flexors on the first is extremely limited, if even it exists at all; and, consequently, that atrophy or paralysis of the interosseous or lumbrical muscles is followed by the nearly complete loss of the extensor movements in the two last phalanges, and of the flexor movement in the first.

In the year 1850, I observed at the Charité two patients affected with progressive atrophy, and with whom the disease had destroyed in a great measure the interosseous and lumbrical muscles. These two patients offered, to almost an equal degree, the following particulars:—The interosseous spaces of the atrophied hand were very hollow; electrical excitation directed on the interosseous or lumbrical muscles produced movements, scarcely appreciable, of abduction or of adduction of the fingers, and to obtain this result it was even necessary to have recourse to electro-puncture. Although the forearm was manifestly emaciated, all the muscles were detected by the means of localized electrization. When the patients were told to extend their fingers, *the first phalanges only would place themselves in extension*, being thrown backwards towards the metacarpus, and *the two last phalanges, far from being extended, were flexed, the more in proportion as the efforts of extension were greater.* In placing even the wrist into flexion the two last phalanges did not appear to extend any better. When they wished to close their hand the two last phalanges were powerfully bent, *but the first were scarcely inclined on the metacarpus;* and the result was, that these patients held but very loosely things put into their hands.

VI.—*Paralysis or atrophy of the interosseous, or of the lumbrical muscles, leads to derangements and considerable changes in the attitude of the phalanges of the fingers; and this proves these muscles to be the sole antagonists of the extensors for the first phalanges, and of the superficial and deep-seated flexors for the two last.*

In the state of repose the phalanges very slightly incline on each other and on the metacarpal bone. This attitude of the fingers is the result of a certain equilibrium between the powers having a tendency to maintain the phalanges flexed or extended, under the influence of the tonic contractility of the muscles acting on them. From the moment the interosseous and lumbrical muscles begin to be atrophied this equilibrium is destroyed, and the phalanges take a false attitude. In this case we see the first phalanges remain more or less extended on the metacarpal bone, and this change is in direct proportion with the degree of atrophy,—that is to say, with the degree of the diminished tonic contractility of the interosseous muscles; at the same time, the two last phalanges become more or less flexed on the first, under the influence of the same cause, and at last the hand takes the form of a claw, and the more so during the effort of voluntary extension.

This deformity of the hand was very apparent with the two patients affected with atrophy of the interosseous and lumbrical muscles whose cases I referred to above. It would not be possible, from these pathological facts, to have an exact idea of the degree of deformity with which the hand can be afflicted when it is completely deprived of the action of its interosseous and lumbrical muscles. In the latter instance it is not only a simple deformity of the hand we

observe, but also the reforming of the articular surfaces or of the ligaments, disorders of such a serious nature that they deprive the patient of the entire use of his hands[a].

B.—MUSCLES MOVING THE THUMB AND ITS METACARPAL BONE.

VII.—*In consequence of paralysis of the abductor longus and extensor longus muscles, the first metacarpal bone is carried into abduction. This faulty attitude of the first metacarpal bone, and the impossibility of bringing it back to its normal position, considerably impede the free use of the hand.*

The first metacarpal bone and the two phalanges of the thumb are maintained in their natural attitude by divers powers acting on them in contrary directions. This natural attitude is the result of a certain equilibrium existing between all these powers, arising from the tonic contractility of the whole set of muscles moving the thumb. When the tonic power of one or more of these muscles is deficient, the first metacarpal bone and the phalanges are seen at the very instant to assume more or less faulty attitudes, which prove an obstacle to the free uses of the hand. Then again, the mechanism of the movements of the thumb always requires the synergetic action of a certain number of its muscles. What is, in those different cases, the relative importance of each of the muscles acting on the first metacarpal bone and on the two phalanges of the thumb?

I had entertained the hope that the electro-physiological researches I have made would have been sufficient to allow me to foresee the functional disorder that must arise from atrophy or paralysis of these muscles. I was mistaken; for among the muscles contributing to the same movements there are some which take a more or less important part, either in maintaining the equilibrium of power, of which the normal attitude is the result, or in performing the movements required by the different uses of the hand. Pathological observation alone is able to elucidate completely this important point of muscular physiology; and this is what I am about to try to establish on facts.

Owing to the natural attitude of the first metacarpal bone, the thumb is found placed on the outer side of the index, and does not interfere with the flexion of the fingers; its extremity easily reaches the pulp of the index and of the middle fingers, with which it is destined to come in so frequent contact throughout the various uses of the hand. It is to the tonic contractility of the long abductor and of the short extensor of the thumb that this attitude of the first metacarpal bone is due; for paralysis or atrophy of these muscles not only deprives the first metacarpal bone of the movements they produce, but causes it also to lose its natural attitude. For ex-

[a] [The author here relates at length some cases in illustration of the fact.—Ed.]

ample, consequent on the paralysis of these muscles, which is very common in saturnine paralysis of the fore-arm, the first metacarpal bone is always seen to take the attitude of adduction, and to be carried into a direction parallel with the carpus. The consequence of this attitude of the first metacarpal bone is, that the thumb falls in towards the palm of the hand, and the more so as the short extensor being paralyzed can no longer moderate the action of the muscles, which being inserted on each side of the first phalanx of the thumb, act as flexors on it.

We can understand to what a degree the continual presence of the thumb in the palm of the hand must impede its uses; for if in such cases the patient wishes to close his hand, his thumb is caught between the flexor muscles and the palm, if he has not had the precaution to contract previously the long extensor, which carries his thumb and its metacarpal bone into extension.

This faulty attitude of the first metacarpal bone, and the impossibility to make it perform its movements of abduction, interfere with most of the movements of the hand, principally those requiring objects to be held between the thumb and the two first fingers.

The extremity of the thumb is found to be placed, in this case, on the level of the two last fingers, and it is not possible to bring it to face the two first unless the extensor longus pollicis be made to contract; but then the thumb, the two phalanges of which are extended, draws so near to the palm of the hand, that, in order to place its extremity in contact with the extremity of the index or medius, the patient is forced to extend their first phalanges on the metacarpal bone, while the two last are flexed at right angles. This position of the fingers is most fatiguing, and takes away the dexterity of the hand.

I have observed the movements I have just described on various patients affected with this kind of paralysis of the thumb, and amongst others in the case of a lady sent to me by Professor Velpeau, and who was particularly devoted to needlework. To hold her needle between the thumb and index she was obliged to place the phalanges in the position I have just described, and she could therefore work neither quickly nor long.

When one alone of the two muscles, the long abductor and short extensor, is paralyzed, the functional derangement is far from being of so serious a nature, because these muscles can, to a certain degree, replace the action of each other.

If the short extensor has lost its action, the first metacarpal bone remains less in abduction, and becomes more flexed on the carpus; then the first phalanx becomes inclined towards its metacarpal bone to a greater extent than in the normal state, if it be the long abductor that is paralyzed, the metacarpal bone is less flexed on the carpus, and is more carried into abduction, but the first phalanx retains its normal attitude.

The former paralysis (viz. of the short extensor) deranges the uses of the hand much more than the latter paralysis (that of the

long abductor), for it is followed by the falling in of the thumb towards the palm of the hand, in consequence of the predominant action of the flexor muscles of the first phalanx, and it deprives the said phalanx of its extension, so very useful in the mechanism of certain movements of the thumb, as in the act of writing, drawing, &c. I have observed the phenomena just alluded to in individuals who, in consequence of saturnine paralysis, had lost sometimes the use of the short extensors, and at other times of the long abductor muscle.

VIII.—*Paralysis or atrophy of the long extensor muscle of the thumb is not very prejudicial to the attitude of the thumb and of its metacarpal bone, nor to the use of the hand. The functions of this muscle, as established by electro-physiological experiment, are confirmed by the pathological phenomena observed during its paralysis.*

When the extensor longus pollicis muscle is paralyzed, we observe the following. The first metacarpal bone assumes an attitude more flexed on the carpus than in the normal state; the second phalanx of the thumb always remains flexed during muscular repose, or when the latter bone is brought into abduction, and the first phalanx into extension; but this second phalanx becomes, on the contrary, extended during abduction of the first metacarpal bone and flexion of the first phalanx.

The pathological phenomena I have just laid down fully confirm the facts established in my electro-physiological researches, as regards the action of the long extensor. Thus, the exaggerated flexion of the first metacarpal bone during muscular repose is due to predominant action of the abductor longus muscle, and of the muscles of the thenar eminence, which are no longer kept in balance by their antagonist,—the long extensor. Extension of the second phalanx can be effected notwithstanding paralysis of the long extensor, this proving so far that there exists another extensor of the second phalanx (abductor brevis and flexor brevis pollicis), producing at the same time flexion of the second phalanx and adduction of the first metacarpal bone.

The flexed attitude of the second phalanx induces a slight difficulty in the flexion of the index, the latter often meeting the thumb, when the patient forgets to turn aside the metacarpal bone. The impossibility of extending the last phalanx during extension of the first occasions simply a certain awkwardness in using the fingers. The mechanism of the movements of the thumb is by no means deranged in the case of writers, draughtsmen, &c., by paralysis of the long extensor of the thumb; this being a demonstration of the fact already established by electro-physiological experiment, viz., that this muscle is not all concerned in the above function of the hand.

IX.—*Pathological observation establishes what is demonstrated by electro-physiological experiment, that neither the abductor longus, the extensor brevis, nor the extensor longus pollicis, bears an appreciable action over supination.*

The oblique direction of the fibres belonging to these muscles may have induced the belief that they would take a large part in the supinator movement, principally when their action on the thumb is spent, or when the latter is come to a fixed position. Winslow, and after him all anatomists, has attributed this function principally to the abductor longus muscle. I have already shown experimentally how far this opinion is erroneous; pathological observation in the case of the patient, Viotte, who has been the subject of many other physiological studies throughout this memoir, confirms my opinion.

Similar pathological phenomena have been often enough observed by me on other patients to allow me to state, that the muscles, the abductor longus, extensor brevis, and extensor longus pollicis, are not at all concerned in the movements of supination.

X.—*Consequent on atrophy of the muscles of the thenar eminence, the first metacarpal bone, yielding to the predominant action of the extensor longus pollicis, assumes the attitude of extension. This predominant action of the same muscle is again manifest when it contracts simultaneously with the abductor muscles of the first metacarpal bone. Therefore, the flexors of the first metacarpal bone are the necessary moderators of the extensor longus pollicis muscle during extension of the last phalanx.*

When all the muscles of the thenar eminence are paralyzed, the first metacarpal bone, carried into extension, forms anteriorly a projecting angle with the carpus, and is carried neither more outward nor more inward than in the normal state; the thumb necessarily follows the first metacarpal bone, but its phalanges remain in their normal position. This attitude of the first metacarpal bone is owing to the predominance of action of the extensor longus pollicis, which, according to my electro-physiological researches, not only extends the last phalanx, but even carries the metacarpal bone and the thumb obliquely backwards and inwards. Now, as we have seen the first metacarpal bone carried into adduction in consequence of the atrophy of its abductor muscles (abductor longus and extensor brevis), in the same manner also we might expect to see the loss of power in adduction of this very same bone give a predominant action to its abductor muscles; but pathology shows us it is not so, for in such cases we always see the extensor longus muscle carry off the first metacarpal bone in the direction of its action.

The same predominance of action in the long extensor muscle is also prevalent during voluntary movements; thus, when we tell patients affected with this kind of paralysis to put their metacarpal bone into abduction, while they extend the last phalanx of the

thumb, this metacarpal bone, obeying the action of the extensor longus, is irresistibly carried into adduction and into extension; but if the patient ceases to extend his last phalanx, while he wishes to carry his thumb outwards, the first metacarpal bone immediately undergoes its movement of abduction.

Here is another experiment elucidating the special action of the extensor longus on the first metacarpal bone. In the normal state, and when the thumb is in its natural attitude, one may extend the second phalanx of the thumb on the first one without the first metacarpal bone being moved. Well, that result is not possibly obtained by a man who has lost the use of the abductor brevis, the extensor, and the opponens pollicis, for the slightest contraction of the long extensor causes the thumb and metacarpal bone to move in totality in the direction of its action. We must, therefore, conclude that the isolate extension of the second phalanx of the thumb cannot be effected physiologically without the synergetic contraction of the abductor brevis, extensor brevis, and opponens pollicis; and this takes place in the normal state, and may be observed on one's self. Thus, when we voluntarily extend our second phalanx on the first one, the muscles of the thenar eminence contract, and sometimes even, if extension of the phalanx be made with a slight effort, the first metacarpal bone performs a slight movement of adduction under the influence of the synergetic contraction of these muscles; but if this same phalanx comes to be mechanically extended,—that is, if voluntary nervous power is not called in to extend the phalanx, there is no longer the slightest contraction to be discovered in the muscles of the thenar eminence[a].

These pathological phenomena show that the opponens, adductor brevis, and flexor brevis pollicis are, for the first metacarpal bone, the antagonists, or rather the necessary moderators, of the long extensor; for, without them, every extension of the second phalanx of the thumb would determine extension of the first metacarpal bone, and would impede the movements of opposition performed by that bone.

XI.—*Paralysis or atrophy of the short flexor of the thumb deprives the patient of the faculty of placing his thumb in opposition with the two last fingers; but, owing to the healthy state of the abductor brevis and of the opponens muscle, the thumb being enabled to place itself in contact with the two first fingers, the hand still retains its principal uses, that of writing, &c.; for instance, the preservation of the adductor muscle of the thumb allows the patient to seize with tolerable strength objects placed between his thumb and index, notwithstanding the loss of power of the other muscles of the thenar eminence.*

It is easily shown, we know by electro-physiological experiment, that the movement of lateral inclination and of flexion of the first

[a] Who would have thought, in the absence of pathological observation, that a movement so simple as the extension of the second phalanx cannot be effected, phy-

phalanx of the thumb, the result of the contraction of its abductor brevis, is more limited than that produced by its flexor brevis muscle. But what the limit of action of each of these muscles is, what their relative importance in the uses of the hand, pathology alone can answer.

The case of M. X. [the particulars of which the author details at length] proves that the flexor brevis muscle is specially destined to incline the first phalanx towards the two last fingers, while the last is extended. This function of the flexor brevis has an importance of a secondary nature, for the healthy condition of the abductor brevis and of the opponens muscle allows the patient to place his thumb in opposition to the two first fingers. Thus it is that M. X. can still use his hand with great dexterity in writing and drawing. However, his short abductor, deprived of the help of the short flexor muscle, does not flex sufficiently the first phalanx, and does not completely extend the second, that the index and middle fingers are bound to bend their third phalanges, to be able to get to the thumb. The result of the forced flexion of the last phalanges of the thumb and fingers is, that the line drawn has not the extent it should have, when M. X. writes or draws. Lastly, the simultaneous movements of adduction of the first metacarpal bone and of extension of the last phalanx are effected with less force than in the normal state.

Patients deprived of the use of the muscles of the thenar eminence always try instinctively to perform the opposing movement by means of the flexor longus muscle. They succeed in bending the phalanges, but whatever effort they make, the first metacarpal bone does not stir. This fact, as well as electro-physiological experiment, shows that the flexor longus pollicis has no action whatever on the first metacarpal bone.

The loss of power of the muscles of the thenar eminence carries with it the nearly complete abolition of the uses of the thumb. But the preservation of the adductor muscle still allows the thumb to render useful services notwithstanding. Thus we see patients hold pretty firmly objects placed between the first phalanx of the thumb and the palm of the hand. They are enabled, by contracting energetically their adductor, and by applying their thumb to the outer side of the second metacarpal bone, to reach the index, which comes to meet it by strongly bending its two last phalanges, and by throwing the first back towards the metacarpal bone.

I attended a tailor in whom the opponens, the short abductor, and the short flexor of the thumb of the left hand were atrophied, and who was indebted to the preservation of his adductor pollicis for being able to continue his trade. He held his cloth firmly enough

siologically, without the synergetic contraction of many muscles? This fact is further proof in favour of the opinion I have already expressed, and to which I intend to give more development elsewhere, viz., that voluntary nervous power rarely (and perhaps never) confines its action to one muscle; and that if it had been able to do so as electricity does, the result would have been irregular movements, and sometimes accidents, such as dislocations, &c.

between the thumb and index of the diseased hand by causing those fingers to perform the movements I have just described.

I shall now give a *general resumé* of the principal facts elucidated by the electro-physiological and pathological researches laid down in this memoir.

A. *Muscles moving the Fingers.*—I. Physiologically speaking, the extensor muscles of the fingers (extensor communis digitorum and the extensors proper of the index and little finger), are the essential extensors of the first phalanges; the flexors of the fingers (flexor sublimis and profundus) have an apparent action on the two last phalanges alone. The interosseous and the lumbrical muscles are in reality the extensors of the two last phalanges and the flexors of the first. II. The above propositions are the result of electro-muscular experiment; but pathological observation, while confirming them, allows us to fix in a still more precise manner the limit of action of each of the preceding muscles, and still better elucidates the importance of the latter, either with reference to voluntary movements, or as regards the normal attitude of the fingers. III. Thus, electro-physiological experiment seemed to establish that during voluntary movements the extensor and flexor muscles of the fingers must have an action, limited, it is true, but real,—the latter on the first phalanges, the former on the two last. Observation of diseased cases shows, on the contrary, that this action is about *nil.* IV. For individuals deprived of their interosseous and lumbrical muscles can neither extend their two last phalanges, notwithstanding the healthy state of their extensors which effect extension of the first phalanges only, nor can they bend the first phalanges, although they possess their flexor muscles, which have a real action on the two last phalanges only; on the other hand, individuals who have lost the extensors or the flexor muscles of the fingers are still able to extend their last phalanges, and bend the first with as much energy as in the normal state, owing to the preservation of their interosseous and lumbrical muscles. V. In most of the uses of the hand we see the first phalanges extended, while the two last are flexed, and *vice versâ*. It was therefore necessary that the phalanges should be independent,—the first of the flexor muscles and the two last of the extensor muscles. Now if these flexors and extensors had an equal action on the three phalanges, as it has been thought hitherto, those contrary and simultaneous movements of the phalanges (the result of the synergetic contraction of these muscles) could not be obtained without their having to overcome a mutual antagonism, which would require great expenditure of strength, and would consequently be an obstacle to manual dexterity and lightness. This antagonism happily does not exist, as it is now made very clear that, physiologically, the extensors and the flexors of the fingers have an apparent action only,—the latter on the two last phalanges, and the former on the first; and lastly, that each interosseous or each lumbrical muscle bends the first phalanx at the same time that they extend the two last. VI. The interosseous

muscles of the fingers, and the flexores sublimis and profundus muscles, are mutually moderated in the individual and tonic action they perform on each phalanx; for the interosseous muscles of the fingers are nearly the sole antagonists of the extensors for the first phalanges, and of the flexors for the two last. This proposition is deduced from the numerous pathological facts, in which we see, consequent on atrophy of the interosseous muscles, the phalanges carried in a permanent manner,—the first into extension, the two last into flexion, under the influence of the extensors and of the flexors of the fingers. This morbid attitude of the phalanges is the cause of serious derangement, such as deformity of the articular surfaces, subluxations, &c. &c., and gives to the hand the form of a claw, more inconvenient than useful.

B. *Muscles moving the Thumb.*—I. The action and the uses of each of the muscles moving the first metacarpal bone and the thumb have been hitherto either overlooked or wrongly defined. II. The long abductor muscle of the thumb is at the same time a flexor and an abductor of the first metacarpal bone. III. The short extensor is the real abductor of the first metacarpal bone; its action on the first phalanx is very limited. IV. The long extensor extends the two phalanges of the thumb, and simultaneously carries its first metacarpal bone, and consequently the thumb itself, obliquely backwards and inwards. These three movements are effected simultaneously, and with equal energy. V. Electro-physiological experiment, as well as pathological observation, shows that the abductor longus, and extensor longus and brevis pollicis are completely unconnected with the movements of supination of the hand. VI. The muscles of the thenar eminence going from the external side of the first metacarpal bone, and to the first phalanx (the opponens, abductor brevis, and a portion of the flexor brevis), place the first metacarpal bone in flexion and adduction. In this attitude of the first metacarpal bone the thumb finds itself in relation (in opposition) with the index only. This is the limit of action of the opponens pollicis; but owing to the muscles that go to the outer side of the first phalanx (abductor brevis and flexor brevis muscles), the first phalanx of the thumb is flexed while it inclines on its external side and rotates on its longitudinal axis from without inwards, while the last phalanx is extended in such a manner that the thumb can successively place itself in opposition with the three last fingers. VII. The adductor of the thumb (we must comprehend in this muscle the muscular fasciculi going to the internal sesamoid bone, because they have the same action) draws the first metacarpal bone towards the second, outside and in front of which it places it when arrived at the maximum of contraction. This muscle can, therefore, make the first metacarpal bone perform four movements in contrary directions,—viz., a movement of adduction if this bone is previously placed outwards; a movement of abduction when it is at the highest point of adduction; a movement of extension when it is flexed; and lastly, a movement of flexion if it is placed in extension by the extensor longus pollicis. The adductor of the thumb performs

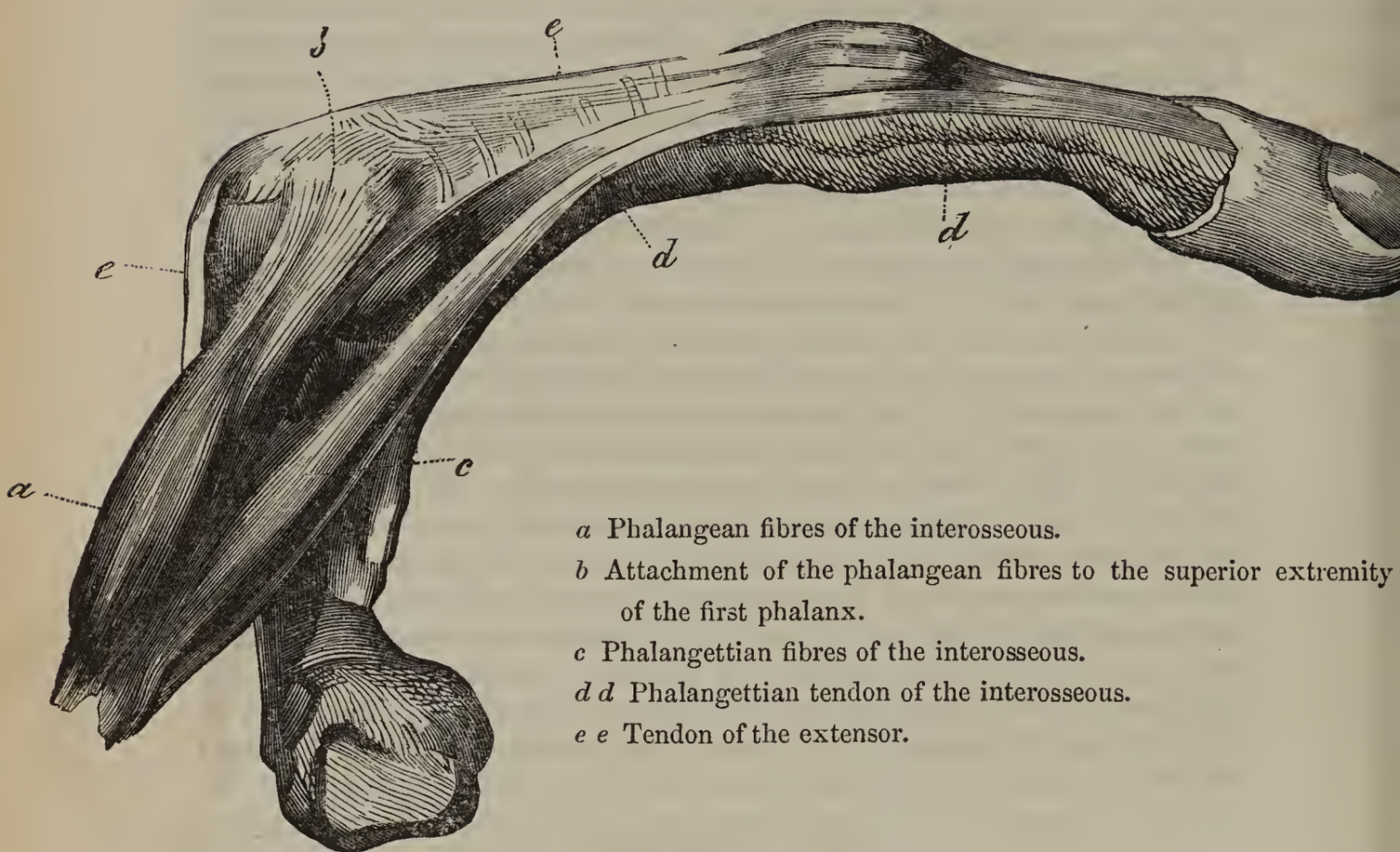
flexion also, like the abductor brevis and the flexor brevis muscles, on the first phalanx of the thumb, while it extends the last; but it inclines the thumb on its internal side, and gives it a rotatory movement on its longitudinal axis, in a contrary direction to the abductor brevis and flexor brevis. VIII. The muscles moving the thumb are not solely destined to make its first metacarpal bone or its phalanges perform various movements; they also maintain them in their natural attitude by means of their tonic contractility by a sort of mutual equilibrium, as pathology clearly shows. IX. If the abductor longus and extensor brevis be paralyzed or atrophied, the first metacarpal bone is carried into a continued adduction by the opponens, abductor brevis, and flexor brevis. X. The impossibility of carrying the first metacarpal bone into abduction, and slightly into flexion, carrying the hand of those offices in which objects require to be held between the thumb and index; and this shows clearly that the abductor longus and extensor brevis are principally destined to place the thumb in connexion with the index. XI. If atrophy has destroyed the opponens, abductor brevis, and flexor brevis pollicis, the first metacarpal bone is then acted on by the abductor longus, extensor brevis, and extensor longus pollicis; but it is solely the tonic contractility of the extensor longus that it obeys, for it places itself in the attitude given by the latter,—viz., backwards and more inwards than if it had been moved by the abductor longus and extensor brevis pollicis muscles. XII. This predominance of action of the long extensor over the long abductor and short extensor equally exists during voluntary movements; for instance:—1. When the muscles of the thenar eminence are destroyed, abduction of the thumb cannot be performed unless the extensor longus does not act during the contraction of the long abductor and short extensor. 2. In the normal state, the simple voluntary extension of the last phalanx by this muscle (the extensor longus) requires the synergetic contraction of the abductor brevis, flexor brevis, and opponens—a contraction without which the first metacarpal bone would inevitably be carried into extension. XIII. The facts laid down in propositions XI. and XII. establish that the opponens, abductor brevis, and flexor brevis pollicis, are for the first metacarpal bone the necessary moderators of the extensor longus muscle during extension of the second phalanx by the latter muscle. XIV. It is evident from the facts laid down in propositions IV., VI., and VII., that the second phalanx of the thumb has three extensors which cannot replace one another mutually, for each individual extensor acts in a contrary direction on the first metacarpal bone and on the first phalanx; for instance:—1. The same muscle (extensor longus pollicis) extends at the same time the first metacarpal bone and the two phalanges of the thumb. 2. The same muscle (adductor pollicis) brings the first metacarpal bone near the second, while it bends the first phalanx, inclining it on its outer side, causing it to rotate on its axis from without inwards, and placing the second phalanx in extension. 3. The same muscle (abductor brevis and flexor brevis pollicis) bends the first metacarpal bone on the carpus, and the first

phalanx on the first metacarpal bone, inclining it on its external side, and giving a rotatory movement on its axis from within outwards, while it extends the last phalanx. XV. The muscles producing the same extension on the second phalanx of the thumb have special uses; thus:—1. The long extensor principally concurs in depressing the thenar eminence, while it extends the two phalanges of the thumb, as when the hand is opened widely. Paralysis or atrophy of this muscle does not induce great derangement in the uses of the hand, for it remains quite foreign to the movements directing a pen, a pencil, &c. 2. The short abductor and short flexor are destined to those uses requiring the simultaneous movements of abduction of the first metacarpal bone, of flexion of the first phalanx of the thumb, and of extension of the second phalanx,—movements in contrary directions, and very frequent, generally accompanying the similar movements of the fingers under the influence of the interosseous and lumbrical muscles, as in the case of draughtsmen, &c. &c., when they draw a line postero-anteriorly. It is conceivable that the loss of those muscles (short abductor and short flexor of the thumb) must deprive the hand of its most important uses. 3. The abductor muscle of the thumb is destined to bring towards the index the thumb, the second phalanx of which it maintains extended, while it gives the first phalanx a lateral movement, in a contrary direction to that imparted by the action of the short abductor and short flexor. Without this muscle objects placed between the thumb and the fingers cannot be held firmly.

NOTE BY THE EDITOR.

[Dr. Duchenne appends, as a sequel to his researches, an anatomical and historical disquisition on the muscles of the thumb and fingers, in the commencement of which he states that both MM. Cruveilhier and Bouvier have reported favourably on his views, and confirmed them by microscopical and anatomical researches. The latter anatomist has described and figured from recent dissection an hitherto not admitted arrangement of the interrosseous muscles, and of the muscles of the thenar eminence, which fully bear out the action assigned to them in the foregoing memoir. The accompanying woodcuts,—the originals forwarded by the author for illustrating his paper in our Journal,—exhibit, 1st, that the fibres attributed to the tendons of the long extensors belong in great measure on the side of the fingers to true ribbon-like tendons, terminating the interosseous and lumbrical muscles, single or united; 2nd, the insertion of the interosseous muscles by a very short tendon on the first phalanx; and 3rd, that all the muscles of the thenar eminence, with the exception of the abductor brevis pollicis, send aponeurotic prolongations, which bind them to the extensor tendon of the thumb, which aponeurotic expansions not only terminate in the tendon of the extensor, but also attach themselves in a direct manner on the upper extremity of the second phalanx.]

FIG. 1.—Ring finger of the right hand, with its dorsal interosseous or adductor.

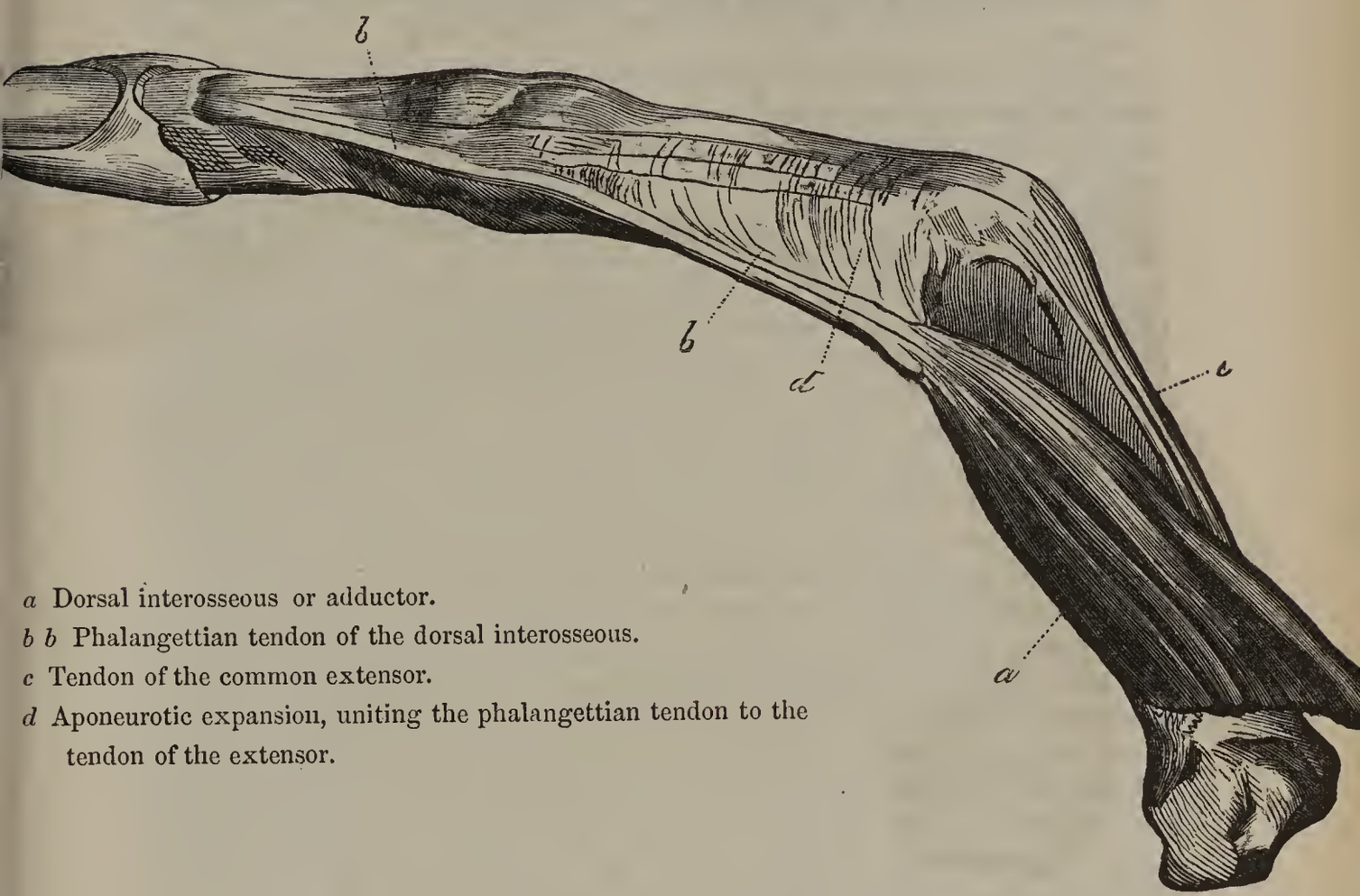


a Phalangean fibres of the interosseous.
b Attachment of the phalangean fibres to the superior extremity of the first phalanx.
c Phalangettian fibres of the interosseous.
d d Phalangettian tendon of the interosseous.
e e Tendon of the extensor.

FIG. 3.—Thumb seen from its inner aspect.

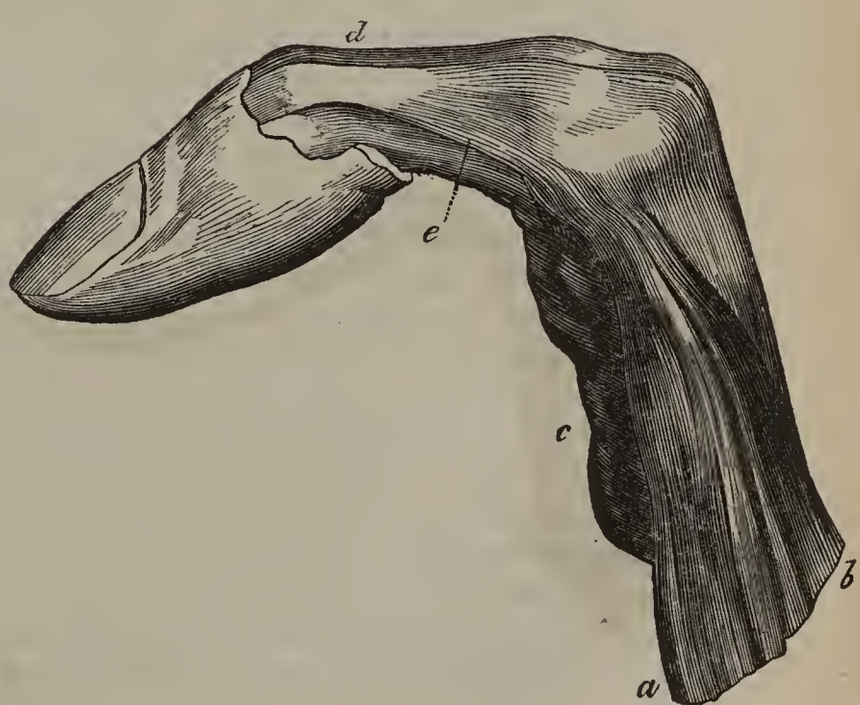
a Adductor muscle.
b Tendon of the extensor.
c Aponeurotic expansion going to the tendon of the extensor.

Fig. 2.—Ring finger of the right hand, with its dorsal interosseous or adductor.



a Dorsal interosseous or adductor.
b b Phalangettian tendon of the dorsal interosseous.
c Tendon of the common extensor.
d Aponeurotic expansion, uniting the phalangettian tendon to the tendon of the extensor.

Fig. 4.—Thumb seen from its outer aspect.



a Short abductor muscle.
b Opponens pollicis.
c Extensor portion of the short flexor.
d Tendon of the extensor.
e Aponeurotic expansion of the short abductor going to the tendon of the extensor.

Case of Aneurism of the Abdominal Aorta. By CATHCART LEES, M. B., Physician to the Meath Hospital, &c.

A BRICKLAYER, aged 33, was under the care of Dr. Head for a tumour in the abdomen, which that physician diagnosed to be aneurism of the aorta; but as a very intelligent surgeon, who had seen the case, considered it to be caused by an enlarged kidney, Dr. Head kindly asked me to see the patient. He presented a very pallid and emaciated appearance, being confined to bed with paralysis of motion and sensation of the lower extremities; there was retention of urine also, and that drawn off by the catheter was highly alkaline. The right hypochondrium was occupied by a large, smooth tumour, passing from underneath the false ribs, not accompanied by any pulsation; but immediately below this, another tumour, the size of a large apple, could be felt, which gave a feeble pulsation without any murmur. Percussion caused a dull sound over both of these tumours, except at the inferior margin of the lower one. The man complained chiefly of pain in his back, which he described as a constant boring pain confined to one spot, but he also suffered from severe paroxysms of pain, which radiated from that spot round the ribs. A large, soft, projecting tumour occupied the place of the seventh, eighth, and ninth dorsal vertebræ, communicating a distinct, single diastolic pulsation, but without any murmur or fremissement; the inferior half of the right side of the chest was dull on percussion, and no respiratory murmur could be heard over that part. He did not complain of cough, nor had he suffered from dyspnœa, dysphagia, or palpitations; the impulse of the heart and its sounds were feeble but regular, and without any abnormal murmur; the pulse was equal in both wrists. He stated that he had strained his back nine years ago in lifting a heavy weight, but he did not suffer from it until within the last two years, since when he had been affected with constant pain in that part. This was at first treated as syphilitic, and then supposed to depend on caries of the vertebræ, for which issues were advised. He gradually lost the use of the lower extremities, and four months ago he first perceived the swelling in the right side, which was supposed to be caused by an enlarged kidney, as at that period the urine was constantly loaded with lateritious sediments. Shortly after this the tumour in the back was observed, and this gradually increased to the extent described. A few days before his death Dr. Head had ascertained the dulness and absence of respiration over the right side of the chest. The patient's death occurred suddenly two days after I saw him, and Dr. Head, having obtained the consent of the friends, asked me to assist him in making the examination of the body. On opening the abdomen, we found the liver filling the right hypochondrium, being pushed forwards and downwards, and from beneath its under edge there appeared a large tumour, passing into the right iliac fossa, partially uncovered by the intestines, as was also the right kidney, which was pushed forwards, and lay to its

outer side: this tumour passed up along the spine, behind the right crus of the diaphragm, and had burst into the right pleura. On tracing up the aorta, a large circular opening, with an elevated, everted edge, came into view, discovering an aneurism, which originated just between the crura of the diaphragm, immediately above the cæliac axis, and had made its way beneath the pleura, covering the diaphragm on the right side; it had then dissected its way laterally between the muscular coat of the diaphragm and the pleura, having the former for its lower, and the latter for its upper boundary, so that it was difficult to say whether the aneurism was above or below the diaphragm, being really situated between its distended layers; and here the bodies, and even the cartilages of the eighth and ninth ribs, were completely removed, so that the spinal cord, encased in its membrane, lay quite exposed, and in actual contact with the contents of the aneurismal sac, which chiefly consisted of firm coagula. The right pleura contained a quantity of coagulated blood; the heart was perfectly healthy.

There are some interesting points connected with this case. In the first place, the insidious course of the disease, the primary cause dating so far back as nine years; next, the difficulty of diagnosis, as, although the patient was attended and carefully examined by several experienced practitioners during nearly two years, yet the real nature of the disease was not even suspected until he came under the care of Dr. Head, who made his diagnosis from the abdominal tumour, combined with the peculiar neuralgic pain in the back,—the great importance of which, as a diagnostic symptom of aneurism of the abdominal aorta was, I believe, first put prominently forward by Dr. Law, in his valuable paper in the twenty-first volume of the former series of this Journal. The absence of any bruit in the tumour was important, as the experience of the professsion in Dublin proves it to be almost invariably met with in aneurism of the abdominal aorta,—a fact of great value, when considered with reference to the same sign as diagnostic of aneurism in the thoracic aorta. In this case its absence was probably owing, first, to the situation of the aneurism in the tendinous canal, between the crura of the diaphragm; and secondly, to the sac being filled with fibrinous deposits. It is curious how life could be carried on with such extensive destruction of the vertebræ and cartilages, as there was really no bony protection for the spinal cord in that situation, it being merely covered by its membranes. The rupture of the sac at its upper part, contrary to the direction of the current of the blood, is also worthy of notice, and moreover, the absence of cough or dyspnœa,—although the physical signs indicated effusion into the right pleura for some days previously to his death,—and which was probably owing to rupture of the aneurism having taken place, and blood being effused into the pleural cavity, as I have seen cases where patients have lived some days after rupture of an aneurism into the pleura, and even into the peritoneum.

Case of Oblique Inguinal Hernia operated on. By Allen French, F. R. C. S. I., Medical Attendant of the Ballygar Dispensary, County Galway.

Sunday, 10th of October, 1852, I was called to John Martin, a man of a good constitution, aged about 64, who was labouring under strangulated oblique inguinal hernia of the right side. Strangulation had occurred on Friday, and from that time up to the period when seen by me, his sufferings had increased. The symptoms of a strangulated hernia were—painful tumour in the region of the right inguinal canal, measuring between five and six inches in length, elastic and moveable; no evacuation from the bowels since the preceding Friday; constant vomiting; the pulse moderately full and frequent; and tongue coated. He had taken unavailingly some aperient medicine, followed by turpentine enemata.

The taxis having been perseveringly, but unavailingly, employed for a considerable period of time, I then had recourse to bleeding, tobacco enemata, and the warm bath. After having in vain used the ordinary means of reduction, I considered an operation to liberate the intestine necessary, and demanded an assistant. While waiting for his arrival, I considered it a fair case to try the mode of reduction used in India[a]. I got a folded sheet carried round the lower part of the abdomen, twisted on itself in front, and again on the sides. I gave the extremities of the sheet to two men, standing on chairs, one on either side, to pull them quietly upwards, while a third held the feet; I then, standing behind him, used the taxis, but without any beneficial effect.

When my friend, Dr. Peyton, Surgeon to the County Roscommon Infirmary, arrived, after satisfying himself that there was by this time no possibility of reducing the hernia but by the operation, he consented to aid me in its performance. Having procured sufficient light, we had the patient placed on a table, about 10 o'clock at night. The hair being previously shaved from the parts, I commenced by firmly grasping the tumour with the left hand, and making a free incision through the integuments along its whole extent; I then raised the fascia with a forceps, and having made a small opening in it with a scalpel, introduced a director, and divided the fascia to within one inch of the abdominal ring, and in the same manner downwards to the end of the incision, and so continued cutting with the director and scalpel until I came down on the sac. We found it necessary to divide the tendons over the ring in the same manner. Having then insinuated the finger between the sac and the abdominal parietes, a band of tendinous fibres was felt, about one inch above the ring, which was divided with a blunt-pointed bistuory.

The hernial sac was now cautiously opened, when a quantity of serous fluid, tinged with blood, escaped, and on enlarging the aperture, a portion of intestine was immediately exposed; the finger was

[a] See Medical Press for May 26th, 1852, page 329.

pushed in the direction of the stricture, and it was divided with a probe-pointed bistoury. The bowel was now cautiously pushed into the abdomen, and the wound closed. We then secured the parts with four sutures, adhesive straps, a pledget of lint and roller, and had the patient put to bed.

The next day I found him free from pain, and the bowels were relieved twice. I ordered him four grains of calomel and four of Dover's powder, to be taken night and morning. Second day, I dressed the wound; there was very little discharge from it. On the sixth day the sutures were removed; and on the eighth and tenth days, I again dressed the wound, which was nearly closed by healthy granulations. The particulars of the treatment are of very little interest. After the fourth day there was a tendency to diarrhœa, for which I gave him light chicken-broth and arrow-root, which checked it. After the eighth day the appetite returned, and I could with difficulty persuade him to keep quiet, as he wished to be up and going about. On the twelfth day, I gave him a truss, which he found a necessity for, as he had been in the habit of wearing one for some time. It however, had not fitted well, and did not suffice to keep up the hernia, which at the time of the operation had existed for six years.

In a case like the present, where the symptoms are so urgent that decision at once is often necessary, to make known the result may be of some importance, the more especially as many conflicting opinions are still entertained as to treatment in similar cases. It is stated, that "the employment of chloroform should supersede the necessity of the warm bath, bleeding, and tobacco, in the treatment of strangulated hernia." From my experience of these remedial measures in hernia, I would not like to give them up for any anæsthetic agent. Tobacco, when used judiciously, and in a sufficient quantity, will produce that degree of complete relaxation requisite for success in the employment of the taxis, and moreover, it acts on the urinary organs, and removes flatus from the bowels: all which are most desirable, should it ever be necessary to operate.

In this case, after giving him the tobacco enema, the discharge from the bowels was accompanied by some flatus, and the kidneys acted, and, from the relaxed state the poor man was in at this time, I am sure if it were possible I should have succeeded in returning the intestine by the hand. Petit and Aston Key object to opening the sac, lest peritonitis should follow from exposure of the bowel and entrance of air into the abdominal cavity. Here it was necessary to open the sac, introduce the finger, and divide the stricture before the intestine could be returned; but we were cautious, and divided only as much of the sac as was necessary to liberate the intestine, and even then there was some difficulty in returning the bowel.

There was no appearance of general inflammation in the sac or intestine when we operated and exposed them; neither peritonitis nor any other bad consequence followed.

Notice of the Efficacy of Chlorate of Potash in Ulcerated Stomatitis and Cancrum Oris. By J. H. Babington, M.B., F. & L.R.C.S.I., Medical Officer of the Coleraine Union Workhouse.

On reading Dr. Duncan's practical paper, in the last Number of this Journal, on the use of mercury in cancrum oris (which I by no means in any way question the efficacy of, or the good results which have followed the mercurial treatment recommended by Dr. Duncan), my recollection was called to an epidemic of ulcerative stomatitis, that occurred in the Coleraine Union Workhouse in 1849, in which I used chlorate of potash with great success.

The symptoms were as follows: The lips, gums, and lining membrane of the cheeks, red, swollen, and tender to the touch; tongue swollen and indented by the teeth, covered over the surface with a foul tenacious coating, and in some places ash-coloured sloughs. There was great pain when the cheeks were moved, touched, or any food introduced into the mouth, together with considerable general fever, and the secretions vitiated.

The first morning I observed the disease two only complained; next day three more cases were presented; and on the fourth morning I had fifteen on the sick list, all from amongst the boys in the workhouse.

The treatment adopted was a mild aperient of rhubarb and magnesia, and the administration of chlorate of potash, dissolved in water sweetened with syrup, in doses of four grains every fourth hour; the mouth was also washed with a weak lotion of solution of chloride of soda. They all recovered in about six days. I treated one case with alteratives and tonics, and it was three weeks before it got quite well; thereby proving the efficacy of the chlorate of potash.

Case of Amputation at the Shoulder-Joint. By J. H. Babington, M.B., F. & L.R.C.S.I., Medical Officer, Coleraine Workhouse.

John Drusmore, aged sixteen years (admitted into the Coleraine Union Hospital, November 1, 1851), was working at a flax-mill, and whilst attempting to raise the rollers of the mill, to disentangle therefrom some flax which had got round the axle, he stretched his hand too far towards the rollers. The sleeve of his jacket was caught and his left arm dragged into the machinery. The fingers sustained some trifling injury; the wrist-joint was smashed, and all the bones entering into it comminuted, but without any external wound. The elbow-joint was opened by a large lacerated wound, and the ends of the bones fractured and crushed. The axilla was laid open by a large lacerated wound, extending under the humerus, from one border of the axillary space to the other; the latissimus dorsi and pectoralis muscles were torn asunder, but their attachments to the humerus remained perfect, yet their lacerated and mangled fibres hung loosely out of a wound, through which the fingers could be

passed readily under the scapula; the deltoid muscle was sound and uninjured; there was no hemorrhage, and the large vessels appeared to have escaped.

It was at once determined to remove the arm at the shoulder-joint. In the performance of the operation I was kindly and ably assisted by my friends Mr. Neill, Surgeon, R.N., who commanded the subclavian artery, as it passes over the first rib, and by Dr. Macaldin, both of whom concurred in the propriety of the operation.

The patient being placed under the influence of chloroform, a flap was formed from the deltoid muscle, which, being dissected up and the joint entered, the humerus was disarticulated, the knife passed behind it, and the humeral attachments of the lacerated muscles were divided, and the limb removed. The arteries, three in number, were secured, and the patient being still under the influence of the chloroform, all the torn portions of the muscles were pruned away. There was no hemorrhage whatever during the operation. The flap of the deltoid was laid into its place, and, as far as practicable, the edges of the wound brought together. Owing to the great destruction of the soft parts underneath in the axilla, perfect contact was impossible; we therefore trusted to the wound healing by granulation.

It was some hours before the patient returned to his sensibility or was aware that his arm had been removed.

He recovered without any unfavourable or remarkable symptom, except that the ligatures did not separate for six weeks, when all the wound had healed.

On the Use of Collodion in Small-Pox and Erysipelas. By Dr. Christen, Assistant Physician to the Prague General Hospital.

It has long been a desideratum in medical practice to prevent, if possible, especially in females, the scars usually left by small-pox on the face and on other exposed parts of the body. To this end the most dissimilar means have been tried and recommended, and have been again, in course of time, laid aside, as at least useless, if not directly injurious.

Very recently it was thought that a preservative, capable of meeting all requirements, had been found in collodion. Nor was this agent long without receiving its share of commendation. Although many considerations occurred *a priori* to the mind against its use, it could not be directly condemned, in opposition to the testimonials in its favour, without repeated and extensive trials of its efficacy in cases of various intensity. The never-failing cases of variola in the Prague General Hospital, which were particularly numerous in the month of May, afforded sufficient opportunity of testing the value of collodion in many points of view.

The collodion was in most cases employed in the stage of papu-

lar development (stippchenbildung), the earliest period when, in general, the diagnosis of variola could be made with certainty. It was applied over a greater or less extent of the face and extremities, and in two cases the entire face was smeared with it. The results were as follows:—As the collodion dried and shrank, the redness of the papulæ diminished, the slight œdema of the skin disappeared, and the covered and adjoining parts became tense. With the progressive development of the pustules, and the accompanying increase of infiltration of the skin in their immediate neighbourhood, this tension became intolerable, especially in those cases in which the entire face was covered, and so annoyed the patients, that means had to be taken before the termination of the variola for the partial or complete removal of the collodion. The further development of the variola was neither prevented nor lessened, but only modified, by the papulæ under the layer of collodion forming even points of pus, which, as the suppurative process advanced, became confluent, and in severe cases formed a nearly uninterrupted layer. The evaporation of the liquid parts was so impeded that fluid pus was still found under the collodion, when the pustules on the other parts of the body had dried and crusted.

In those cases in which the collodion had to be partially or entirely removed on account of the intolerable tension, capillary extravasations took place soon after the pressure was removed, in the form of numerous ecchymoses under the epidermis, loosed from the corroded corium, which soon assumed a dark colour, and gave the patients a still more repulsive appearance. The suppuration had, as a natural consequence of the prolonged retention of the pus in the fluid state, spread more broadly and deeply; the scars, instead of being prevented as was intended, were more extensive and deeper, and were plainly perceptible even in those lighter cases, in which the surrounding parts, which had not been smeared with the collodion, presented scarcely a trace of a cicatrix.

The collodion also appeared, especially when extensively applied, to exercise an unfavourable influence on the general course of the disease. That it must, by suppressing the function of the skin, have an absolutely injurious effect when its application is general, and uninterruptedly kept up, is, according to physiological laws and our experience of the operation of analogous influences on the human organism, as clear as possible. But the arrest of evaporation, and the great extent of matter under the covering of collodion, appears to be of still greater importance, promoting as it does in a great degree the absorption of the pus, and favouring extremely that state of pyœmia which is so apt to occur when the eruption is extensive.

From the foregoing observations, thus briefly related, the employment of collodion in small-pox consequently appears to be not merely useless, but also directly injurious and inadmissible. In mild cases of variola, from which the favourable results that have been recorded appear to be derived, its use is superfluous, and in severe cases, with extensive eruption, from which our present conclusions have been chiefly drawn, it is absolutely prejudicial and objectionable.

As to the influence of collodion on the course of *Erysipelas*, the cases I have observed justify the following remarks:—In symptomatic erysipelas, depending on internal causes, its effects appear at first to be very surprising: the redness disappears; the swelling and pain become less, and a feeling of tension and numbness occurs in the parts which have been smeared with the collodion; nevertheless, the general phenomena, and the complications which may be present, continued unaltered, and in a short time, sometimes only a few minutes, the erysipelas commences to pursue its course unchecked, in the neighbouring or in distant parts of the body, even when the repeated application of the collodion follows closely on its track. The effect then is, like the remedy itself, merely local and transient. Collodion fulfils the indication as little as other means of demarcation which have been recommended, as for example, cauterization with nitrate of silver or with acids, inunctions with mercurial ointment, &c. Facts, apparently of an opposite nature, in my opinion probably refer to cases in which the collodion was applied at a time when the process was about to terminate, or where, without its employment, the erysipelas would not have advanced further.

The employment of collodion appears to be more useful in erysipelas arising from local causes. In erysipelatous wounds, ulcers, slight burns, erysipelas from insolation, and similar cases, its use is decidedly advantageous. Although I have not had the opportunity of making many observations on this part of the subject, I will briefly communicate the results I have obtained. The immediate effect is the same as in symptomatic erysipelas: the redness, swelling, pain, and vesication rapidly disappear, and depots of pus do not so readily form. In a case of gangrenous erysipelas of both eyelids, the repeated and tolerably extensive use of collodion on the surrounding parts, after the gangrene was arrested and the greater part of the gangrenous portion had separated, speedily removed the infiltration of the edges and a burrowing abscess, as slight as could well be expected in that situation. In a case of erysipelas with very considerable vesication on the backs of both hands and reaching to the wrist-joint—the consequence of severe insolation—the collodion was, for the sake of comparison, abundantly applied to one hand, while the other was merely treated with cold fomentations. On the application of the collodion the pain immediately ceased, and was replaced by a feeling of numbness and stiffness. The diffused vesicles and the very considerable œdema rapidly subsided, and the course of the disease was thereby much shortened; while the vesication on the other hand increased in size and extent, and when emptied filled again, the œdema subsided but very gradually, and the pain was very much aggravated by the exposure of the corium. On the fifth day after the patient's admission into hospital, the hand which had been treated with collodion, and in the intervals with cold applications, had regained its normal volume. The pain, œdema, and blisters had disappeared, and nothing remained but a slight stiffness of the hand and a parchment-like dryness of the epidermis, while the other hand

was, so late as the tenth day, considerably swollen and painful. In the instances I have mentioned, and in slight burns, the use of the collodion has proved of decided advantage, and it deserves to be recommended in similar cases.—*Vierteljahrschrift für die praktische Heilkunde*, Band 4, 1852. Originalaufsätze, p. 92.

[The above account of the trial of collodion on an extended scale is highly interesting at present, when its local therapeutic action in many cutaneous affections has been so much vaunted by some. That it failed in Dr. Christen's hands in the treatment of small-pox is manifestly due to the injurious effects resulting from the uneven contraction and compression of the integument caused by the rapidity of evaporation of the ether in which the gun cotton is dissolved to form collodion[a]. And this is fully proved by the beneficial effects consequent on the use of the solution of gutta percha in chloroform for the same purpose, as reported by Dr. Graves in our last volume.—Ed.]

On Induration of the Areolar Tissue (Scleroma), in New-born Infants.

By Professor Pastorella.

Induration of the areolar tissue is a disease almost peculiar to foundlings. It very seldom occurs before the fourth day after birth, rarely after the fifteenth, and never later than the fourth week. It comes on unexpectedly, or its approach is announced merely by an icteric discoloration of the skin. Suddenly the legs become slightly reddened, their temperature falls; there is no indication of pain, and the tissues gradually attain the hardness of marble. The affection subsequently extends in a similar manner to the arms, abdomen, and thorax, so that the patient in a short time becomes entirely rigid. The skin meanwhile has become yellow; the voice is shrill and screaming; the appetite fails; the bowels are confined; difficulty of breathing supervenes, followed by coma, and death ensues between the tenth and fifteenth day of the malady. Inflammation of the umbilical ring, and erysipelas of the genitals and inside of the thighs, are two complications: the former an unfavourable and not unfrequent symptom; the latter of rarer occurrence, but an almost infallible presage of death.

Various causes have been assigned as predisposing to this affection. At one time it has been attributed to premature birth, and to the imperfectly developed state of the child; at another to a cachectic state of the mother, or to the impure air of the hospitals; but more frequently it has been supposed to arise from the action of cold. Professor Pastorella, Physician to the Foundlings, near Trento, seeing the disease in children born at the full time, of stout and healthy mothers; finding the air in the charitable institutions purer, and the provisions against cold much better than in the dwellings of the poor, where he never happened to meet the disease; and more-

[a] Neligan's Treatise on Diseases of the Skin, p. 408. 1852.

over, observing it to be particularly prevalent in the months of May and August, cannot attribute the occurrence of scleroma to any of the above-mentioned causes, and candidly acknowledges his ignorance of its source. However he suggests that the causes of the disease might be found in the numerous methods employed by the mothers during pregnancy to conceal their state, or to destroy the fruit of their illicit amours.

Scleroma usually presents itself under a twofold aspect: at one time it is œdematous or serous, the integuments being moderately firm and infiltrated with serum, which flows abundantly from incisions made in them; at another it is solid or adipose, the skin being more firm, remaining dry when cut, and appearing to be infiltrated with an exudation not unlike the congealed fat of animals. In both forms Gardien found the glands and lymphatics constantly enlarged. The author has seen, in addition, venous congestion in the membranes of the brain, the lungs, and the liver, and the right side of the heart gorged with black and uncoagulated blood; but he never found either pulmonary hepatization or signs of inflammation in the gastro-intestinal tube, nor did he meet a case in which there was an open foramen ovale.

As to the pathology of the disease, writers may be divided into two classes,—those who consider the areolar induration to be primarily an affection of the skin; and those who consider it to be merely secondary to some internal lesion. Among the former, some regard scleroma as a cutaneous phlogosis; others consider it to be a condition not unlike simple œdema; and many, adhering to their etiological view of the subject, believe it to be nearly allied to frostbite; while of writers of the second class, some attribute it to hepatic disease; others to intestinal or pulmonary inflammation; and some to retarded closing of the foramen ovale. The author, observing that the first symptoms appear in the skin, without being preceded by disturbance of any function, and believing that so profound an alteration could not be induced by the trifling lesions met with in the viscera, adopts the views of those who believe it to be a local and primary disease of the integuments. He does not, however, in the absence of heat, pain, and suppuration, view it as as an inflammation of the areolar tissue; nor does he, with others, regard it as a simple œdema; but, led by the results of post-mortem investigations, by the analogy of its symptoms to those of other diseases, and by the argument *a juvantibus*, he considers it to be an affection of the peripheric portion of the lymphatic system.

Various plans of treatment, adapted to the several pathological views just now enumerated, have, as might be expected, been proposed. Those, and they are the greatest number, who regard scleroma as a congelation, have wholly directed their endeavours to the restoration of the natural warmth, and to the re-establishment of the capillary circulation. Those, on the other hand, who consider it to be a secondary affection, adopt a treatment calculated to remove the

internal congestions which have been proved to exist. The arguments advanced on both sides are, as usual, very numerous. The author states, that he patiently, and during a long time, tried the various plans recommended, and that he invariably found, to his great disappointment, that three cases out of four terminated fatally; from which he inferred that all these methods were either useless or injurious. Then, laying aside all interference, he found that the number of deaths was neither increased nor diminished, which proved at least the inefficacy of the means he had formerly employed. However, disliking the part of an inactive observer, he tried a method suggested to him by his view of the nature of the malady, and which he has since read of as having been advantageously followed by others. He rubbed the thighs, abdomen, and chest of his patients with one drachm of mercurial ointment, and subsequently washed it off by means of a bath of warm milk, repeating the inunction and the bath every twelve hours. Under this plan, which he has now tried for many years, he has not had to deplore the loss of more than one-third of his little patients; he has seen no bad effects from the treatment; and states that the resolution generally commences with the third application of the ointment, and that the fifth is rarely necessary.—*Gazzetta Medica Italiana Federativa Toscana*, 1852, p. 228.

[The above affection is extremely rare in these countries, almost never occurring except within the walls of an hospital, and consequently, although it has been described under the name of skin-bound disease, by Denman, Underwood, Maunsell and Evanson, &c., all mention of it has been omitted by some of our later systematic writers on the diseases of children. In the Dublin Lying-in Hospital, its appearance has generally taken place during the prevalence of puerperal fever among the women, and of trismus nascentium among the children. Hence it has always been considered to be connected with an unhealthy state of the atmosphere of the hospital, and although the author of the foregoing paper has expressed an opinion that the air in the dwellings of the poor is less pure than that in the Italian Foundling Hospitals, it is well known that the crowding together of a number of individuals in one building is, notwithstanding the greatest attention to cleanliness and ventilation, unfavourable to health. In Dublin the disease has generally been attended with diarrhœa, which appears to be contrary to the author's experience, and trismus nascentium has often supervened during its course. The author's views of its pathology may find support in the resemblance of the disease to the phlegmasia dolens of women, which, although now generally regarded as a form of phlebitis, was until within the last twenty years looked on as an affection of the lymphatic system. In Dublin the treatment by mercurial inunction and baths has been tried in the combination of infantile erysipelas with induration of the areolar tissue, but did not prove more successful than that which included the use of quina with

vapour baths, and attention to the state of the bowels. Good descriptions of the induration of the areolar tissue are to be found in De Salle's translation of Underwood's Treatise, with notes by Jadelot, and in Rochoux's article on the subject in the Dictionnaire de Médecine.—Ed.]

Cure of Two Cases of Induration of the Areolar Tissue in New-born Infants (Scleroma), by the Use of Warm Fomentations with Decoction of Cinchona Bark, and of Frictions with Camphorated Ointment. By M. Clertan, of Dijon.

On the 14th of December, 1842, I attended Madame Dechaux, who was then delivered, at the full term, of a well-formed but apparently delicate female infant. On the third day the nurse called my attention to the child, in consequence of its having lost its appetite for food, while its respiration was attended with constant moaning, and a portion of the body had assumed a deep red colour. There had not been any vomiting, but the motions were a little serous, intermixed with deep green; the face presented spots of reddish-yellow, the eyelids were swollen, the features cold, and the pulse and the action of the heart obscure and unaccelerated. On the infant being stripped, I found the posterior part of the trunk and the lower extremities of a deep red hue, and sufficiently hard to resist the pressure of the finger. The induration extended upwards as far as the lower angles of the scapulæ; the fore-arms were swollen and of a pale red colour. All the parts affected with this dense œdema were increased in volume. I immediately had the child kept moderately warm, while a decoction of cinchona bark was being prepared. As soon as this was ready, I caused the entire surface of the body to be fomented for five or six minutes with the warm decoction, after which I had it rubbed for half that time with camphorated ointment. At the close of these operations the little patient was wrapped in a thick, fine blanket and placed in bed, after having taken the breast better than she had done before the friction. On the fourth day the tissues had become universally supple, the natural colour had re-appeared, and the normal functions were completely re-established; the fomentations and frictions had been repeated three or four times a day.

Six months ago I was sent for to see a male child, which had been born at the termination of the seventh month. During twelve days which had intervened since birth, its weakness had been increasing, its voice had become inaudible, its skin was growing cold. In spite of all the measures employed, its death was hourly expected. Having it stripped, in order to use frictions, and to expose it to the rays of a July sun, I found the lower extremities, the pelvis, and the left fore-arm, affected with œdematous induration. The pallor of the face was extreme. I had the entire body washed without delay in warm decoction of cinchona bark, and subsequently rubbed

with the camphorated ointment. On the third day the induration had wholly disappeared.

I should observe, that this child was seized on the fifth day from the disappearance of the scleroma with epistaxis, which returned three times a day during the three following days. It appeared to be on the point of dying, when compresses of sedative water, placed around the neck, suspended the hemorrhage, each attack of which, although consisting of but a few drops, was rendered dangerous by its persistence. Under the influence of this remedy the little patient recovered, and is now in the enjoyment of perfect health.—*Journal des Connaissances Médicales Pratiques et de Pharmacologie*, Novembre, 1852, p. 91.

[The foregoing notice of the successful treatment of scleroma in two cases, by M. Clertan, forms an interesting addition to Signor Pastorella's account of the disease.—Ed.]

Observations on Spasm of the Glottis. By Dr. Lederer, Assistant Physician to the Imperial and Royal Clinique for Diseases of Children, at Vienna.

Dr. Lederer states, that were we to attempt a division of spasm of the glottis, as it here presented itself to his observation, he might perhaps distinguish two varieties, although it must be acknowledged that these merge insensibly into one another, bearing somewhat the mutual relation of clonic and tonic spasm. While in the former and slighter kind, the little patients, on awaking, crying, or drinking, make repeated expirations with a plainly audible, sibilant or crowing, obstructed inspiration, and immediately afterwards appear to be again relatively well,—in the latter an asphyxiated condition occurs, with cyanosis, coldness, suspension of the pulse and of the action of the heart, the children remaining comatose after each attack; or this second form often passes even into eclampsia, of which he had lately an opportunity of seeing three cases. A review of the cases of this disease from January, 1850, to the end of June, 1852, from observations made in his Clinique, at which were presented, on an average, 4400 sick children yearly, affords the following result:—Of 96 children affected with spasm of the glottis, 92 had atrophy of the cranium (craniotabes),—some with and some without hypertrophy of the brain—one with acute hydrocephalus, one with chronic œdema of the brain; three had rachitis of the trunk and of the extremities without craniotabes[a]; one had congenital disease of the heart.

Their ages were—at and under a fortnight, two; one month, two; two months, two; three months, two; four months, four; five months, seven; six months, seven; seven months, seven; eight months, ten;

[a] Rachitis, in its several forms, is so frequent an affection at the Children's Hospital at Vienna, that of ten children under two years of age, six are found to labour under it.

nine months, seven; ten months, six; eleven months, five; one year, eleven; thirteen months, two; fourteen months, five; fifteen months, one; sixteen months, two; seventeen months, one; eighteen months, three; twenty months, one; twenty-one months, one; twenty-two months, one; two years, six; three years, one[a].

In the several months there were—in January, ten cases; in February, twenty-six; March, twenty-two; April, thirteen; May, ten; June, four; July, one; August, none; September, one; October, two; November, none; December, seven.

Of the patients, fifty-nine were boys, and thirty-seven girls[a].

It is further worthy of observation, that it was generally on account, not of the thymic asthma alone, that advice was sought, but of other intercurrent affections, a statistical account of which was an evident desideratum; but in attempting this the following difficulty presented itself to the author, viz. that in extreme youth the form of a disease seldom continues long pure; a bronchial or intestinal catarrh, or a secondary affection of the brain, soon setting in; and consequently, in the course of the disease, when the children were generally presented, it was not always possible to distinguish the primary from the secondary affection. But in general they were either diseases of the lungs or encephalon which occurred simultaneously with the spasm.

It appeared to the author remarkable that during the course of the disease the spasm often entirely ceased for one or two days, and even returned after an absence of several weeks. In none of these cases did death ensue from the spasm or during the attack, but mostly either from the intercurrent disease, or from the continued effect on the general system of those causes which originally produced the arrest of osseous development.

The result of the post-mortem examinations of the eight children who died with the spasm in the hospital must rather be considered as giving negative information; for if among these the thymus gland was found in two to be very small; in four of normal size; and in two to be enlarged; and if with these are placed the cases in which considerable hypertrophy of this organ was unaccompanied by any trace of spasm,—the thymus gland will certainly be acquitted of any share in the production of the affection under consideration.

Of equal rarity did the author find, in either the external or internal organs, signs of the scrofulous diathesis, on which the adherents of the thymic origin of the disease laid much more weight than on the rachitic, since this made the foundation of their system; and though he sometimes found the view of the reciprocal exclusion of rachitis and tuberculosis refuted by the autopsies, the cases were not numerous, and neither one nor the other condition was highly developed.

[a] The total number of patients in 1850, in the five months of June, July, August September, and October, bore to that in the remaining seven the proportion of 2300 to 2800; and in 1851 the proportion of 2304 to 2820.

In reference to the bronchial glands, to the swelling or tuberculous infiltration of which a permanent place has been assigned in the causation of the spasm[a], Dr. Lederer observes, that in the autopsies of the cases he has mentioned, these glands were twice found to be small, three times were they swollen, and three times they were of the normal size; and in no case was the swelling so considerable that it could be assumed to be the cause of the spasm.

As to the larynx, trachea, and epiglottis, they were more or less vascular in five cases, in some of which hepatization of the lungs, in others considerable bronchitis, was found; in the other three cases these parts were quite pale and anemic.

Finally, as to hypertrophy of the brain, which has been said to play an important part in producing the disease, he remarks that the weights of the brain were as follow:—In a child of three and a half months, it weighed sixteen and a half ounces; in one of five months, one pound three ounces; in one of seven months, one pound three ounces and a half; in another of the same age, one pound five ounces; and in another, one pound seven ounces and a half; in a child of eleven and a half months, one pound ten ounces and a half; in one of thirteen months, it weighed one pound eleven ounces; and in one of two years, the brain weighed two pounds.

If we now compare the foregoing numbers with the average of the weight of the brain for these ages, statistically established by Professor Ritter V. Mauthner, in his work on Cerebral Diseases, we shall find in one case an excess of six ounces, and in another an excess of three ounces; while in the others the weights do not essentially vary from the average. The following appearances were, on the other hand, constantly found:—The cranium was in all the eight cases of a blueish-red colour, and so full of blood that numerous drops of various sizes could be pressed out with the finger; the membranes of the brain were in a state of extreme venous congestion, especially in the cerebellum; the cerebral substance was highly sanguineous and infiltrated with serum. How much of all this is to be regarded as the cause of the spasm, and how much is to be looked on as its consequence; or how much may be the consequence of the concomitant affections; or how much finally belongs to the spasm, as one of the co-existent diseases,—the author does not investigate.

A short review of the above observations, says Dr. Lederer, shows an excessively great frequency of the occurrence of *craniotabes* in spasm of the glottis, this lesion having been found in ninety-two out of ninety-six cases; secondly, that the age most liable to the spasm is between the eighth month and the end of the first year; thirdly, that the disease occurs in the most striking manner, most frequently in the months of December, January, February, March, April, and May; fourthly, that the majority of the patients are males

[a] [See Dr. Ley's valuable and excellent Treatise on the disease. London: 1836.—Ed.]

(to which latter circumstance but little value is attributed, because boys are in general more liable to illness than girls), and, to draw a conclusion from all that has preceded, it would appear that the most frequent predisposing cause of spasm of the glottis is to be found in the existence of craniotabes. But if the nervous irritation of rachitic children is so striking that even the principal nerves re-act against the slightest pressure, and the smaller often on mere handling manifest the most violent pain, the proximate causes are to be sought in everything which, by impairing the power of life in the vascular and nervous systems, makes the organism of the child still more susceptible; consequently they are to be found in long-standing diseases, in anomalous dentition in the severe weather of winter and spring; and though the disease is not strictly an epidemic or endemic affection, it appears to be closely connected with the circumstances of the seasons and of the weather.

The treatment employed when the spasm required more attention than the complicating disease consisted in the regulation of a suitable regimen, and the employment of oxide of zinc, belladonna, and opium,—of which he always gave the preference to the first, because it can be given in larger doses and for a longer time; while the continued use of opium especially is not advisable in this affection, on account of the hyperemia of the membranes of the brain, even though the author does not *entirely* participate in the exaggerated dread which many physicians have of narcotism in the treatment of children.

Dr. Lederer had recourse to the employment of a local bleeding from the head only where the attacks came on with violence repeatedly in the day, in a child sufficiently strong to bear depletion, or where the attacks passed into eclampsia with well-marked meningeal hyperemia, for in this affection much benefit is not to be expected from a lowering plan of treatment.

He has seen no good result from the inunction of croton oil, or the application of a blister over the larynx (in die Halsgrube); the local use of the oleum hyoscyami sometimes appeared to be advantageous.

It is only in the slighter degree of the spasm that he says he could venture to disregard this symptom, and direct treatment solely to the craniotabes, by adopting the remedies fit for rachitis, viz. phosphate of lime and cod-liver oil. Thus, Dr. Levzinsky, Physician to the Hospital, communicated two cases which occurred in his private practice, in which he saw the slighter form of the spasm removed with the completion of the ossification of the skull, under the use of the phosphate of lime: one was that of a child two years old, with hypertrophy of the brain and well-marked craniotabes; the other was that of a child one year old, with craniotabes, without other complication.

A combination of both classes of remedies, that is, of those required for the spasm with such as are calculated to remove the cranio-

tabes, would certainly be desirable, but this is not easy to adopt in practice, because the former must be given in small doses and act quickly, while the latter require to be exhibited in larger quantity, and produce their effects but slowly.—*Journal für Kinderkrankheiten*, July 1852, p. 1.

[The foregoing observations appear to be written for the purpose of proving the existence of a connexion between spasm of the glottis and what the author terms craniotabes, which he admits to be a variety of rickets. It is quite evident that the disease in Vienna must occur more frequently in rickety than in non-rickety children, because, according to the author's statement, the majority of children that came under his notice were affected with rachitis; but in this country it does not appear to affect the rickety more than others,—on the contrary, some of the most rapidly fatal cases have occurred to the finest and apparently most healthy children.

Although Dr. Lederer's cases prove the disease to be confined to the period of dentition, he does not appear to trace the connexion between it and this process; and this connexion will account for its more frequent occurrence during the winter months, as all diseases of dentition are then aggravated by want of sufficient exercise in the open air. We must say that we are greatly disappointed, both with the account of the disease and of the mode of treatment given by the author. We publish the above abstract of it merely on account of the statistics contained.—Ed.]

On Mental Alienation in Childhood. By Dr. Rösch.

This occurs, according to the author's, and contrary to the general, opinion, with tolerable frequency. The rarest form is that of monomania, because in children the power of thought and contemplation is not as yet fixed and constant; the will is not as yet sufficiently concentrated in one direction to rise above all other governing ideas, and to become permanently settled. Melancholy is less rare; mania (Tobsucht) is still more frequent; next in frequency is dementia (Verrücktheit); lastly, idiocy (Blödsinn) is the most common form. It is remarkable that frequently in complete idiocy, only one or other function of the mind is impaired, while another may be healthy or even acute. In the latter case we may give a more favourable prognosis, as in mania and melancholy, which are often secondary affections, depending on causes operating on the brain.—*Vierteljahrschrift für die Praktische Heilkunde*, 1852. Band 3. Analekten, p. 115.

An Inquiry into the Action of the Anthelmintics. By Dr. Küchenmeister, of Zittau.

Dr. Küchenmeister has examined the various vermifuges, by immersing the living intestinal worms of fowls, cats, and dogs, in albumen, at a temperature exceeding 77° Fahr., and adding the anthelmintics in the form of infusion or of powder. In some cases, a mixture of warm milk and water was substituted for the albumen. The experiments were not continued for more than from forty to forty-eight hours, if the worm had not been killed before the expiration of that time. Dr. Küchenmeister made use of electricity as the most delicate re-agent for proving the occurrence of the death of the worms. In the first place, electricity cannot be considered as a vermifuge. The author subjected a female *Heterakis vesicularis*, taken from a partridge that had been killed, to the action of a rotatory apparatus, which was kept up with longer or shorter intervals during an entire day. The animal was not destroyed by the experiment. He next tried the remedies employed for the removal of tæniæ, and first tested kousso in the following manner:—A living *Tænia crassicolis*, procured from a cat, was placed at four o'clock in a mixture of albumen and dolichos pruriens. The worm appeared to be perfectly well in this mixture, and at two o'clock on the following afternoon exhibited the most vigorous movements. The tænia was now transferred to a vessel containing a mixture of infusion of kousso and some of the infused as well as some of the fresh powder with albumen. The temperature of the mixture was 30° R. (99.5° F.) On its introduction, the worm quickly extended itself; after some time it was found to be dead, its colour having changed to a dirty reddish-yellow. Two *Tæniæ serratæ* were placed at about half-past one in the afternoon in a mixture of albumen and kousso; at two o'clock they were dying, and at three completely dead. Two *Tæniæ serratæ* from the same dog were brought in contact with kousso and milk at half-past one in the afternoon, and at two o'clock were dead. Two *Tæniæ serratæ* were placed at half-past one in the afternoon in albumen, mixed with decoction of pomegranate root and with some of the powdered root: they died in three hours. Two others were placed in milk mixed with the decoction only: they died in three and a half hours. A *Tænia crassicolis* was put into a mixture of albumen with ethereal extract of male fern: it died gradually in three hours and three quarters. A number of *Tæniæ cucumerinæ* were placed in a mixture of albumen and oil of turpentine: they were dead in an hour and a quarter.

A number of the same were put into a mixture of albumen and castor oil; they appeared lively at first, but were dead in seven hours. Similar worms were put into a salad, composed of pieces of unwatered herring, boiled potatoes, large pieces of onion and garlic, albumen, vinegar, and a large quantity of oil. They died in eight

hours. Lastly, the author tested the vermifuge powers of the brown oxide of copper: fifteen grains were administered in the course of four days to a strong cat. When the body was opened, the entire intestinal canal was found to be full of fluid, yellow, flaky fæces; the intestine was softened, and denuded of epithelium, especially at the termination of the ileum, where the adjoining Peyer's glands were much swollen, particularly in two situations, one of which was an inch and a half long by one-third of an inch broad; the other was nearly circular, and its diameter one-third of an inch. The cat had been purged. The tæniæ and ascarides it contained were lively. It would hence appear that this substance is both inefficacious as a vermifuge and dangerous to the system. The following table contains the results of the above experiments:—

In milk boiled with kousso tæniæ died in half an hour.				
In a mixture of oil of turpentine and albumen, in	1,	to	$1\frac{1}{4}$	hour.
In decoction of kousso with albumen, . . .	$1\frac{1}{2}$	,,	3	hours.
In decoction of pomegranate root with milk, .	3	,,	$3\frac{1}{2}$	,,
In decoction of pomegranate root with albumen,	3			,,
In ethereal extract of male fern with albumen,	$3\frac{1}{2}$	,,	4	,,
In castor-oil with albumen, ...	8			,,
In salmagundi with garlic and onions, . . .	8			,,

Kousso would therefore seem to be the most efficacious remedy against tæniæ. When pomegranate bark and male fern root fail, their failure may be owing to the habit of administering a laxative in from four to six hours after the exhibition of the vermifuge, by which the latter may be carried beyond the worm. With regard to pomegranate root, it must be observed, that in large doses it occasions diarrhœa. The same remark applies to castor-oil. The author also alludes to cold water, strawberries, dolichos pruriens, and filings of tin. When tæniæ are placed in water containing ice, they are instantly benumbed, and if allowed to remain in it, they will always be found at the end of ten hours to be quite dead. Strawberries may be useful as a mild remedy in cases of tapeworm; if large quantities of them be taken on an empty stomach, entire portions of the worm will often be passed. Dolichos pruriens, with which the author tried many experiments, appears to possess no power of destroying worms. The author has also minutely studied the medicines recommended for the removal of round worms. In albumen, these worms behave as the tæniæ; in water, at about 77° F., they live for some days, but swell, stiffen, become longer, thicker, and more sluggish; they lose their power of suction, and their motions become slow and only partial,—they resemble leeches which have gorged themselves. In general, however, the males and young neutrals resist the effects of water longer than the mature, impregnated, egg-bearing females, which become quite rigid and inflexible, and swell considerably.

Milk and whey affect the worms like water. The following are the medicines, the effects of which were tested:

1. Camphor. An ascaris lived from eighteen to twenty hours in albumen into which some camphor had been introduced. 2. A mixture of oil of turpentine and albumen killed some ascarides which were placed in it in from two and a half to six hours. 3. Ascarides lived forty hours in albumen and wormseed, whether the latter was employed in the form of powder or infusion. 4. Some ascarides were placed in albumen mixed with santonine; they did not die in it, nor did they die in a watery infusion of santonine. When santonine was dissolved in oil, especially in castor-oil, and mixed with albumen and ascarides, the latter died in ten minutes. An injection of santonine and castor-oil was thrown up the rectum of a cat, and produced numerous motions containing dead worms; and on killing the cat, the entire of the lower portion of the intestinal canal was ascertained to be free from worms, while four were found near the stomach quite rigid and extended, and retaining but little life. A *Tænia crassicolis*, however, was found in the intestines, and appeared to be quite uninjured and very lively. 5. A mixture of albumen and aniseed, with a strong infusion of the latter, killed the worms in about twenty-four hours. 6. Parsley, mixed with albumen, killed ascarides very slowly. 7. Flour of mustard and albumen destroyed them in about four hours. 8. In rue the worms lived upwards of twenty-four hours. 9. The same was the case with millefoil. In contact with tansy, valerian, and camomile, great numbers of them lived for twenty-four hours. With onions and garlic they perished in from ten to fifteen hours. A decoction of cloves, with or without albumen, killed them in twelve hours. In an infusion of ginger, with or without albumen, they lived about twenty-four hours. Petroleum, mixed with albumen, killed them in less than six hours, as did also oil of cajeput and albumen.

A series of vermifuges, taken from the class of balsamics, was tried in like manner, namely, assafœtida, ammoniacum, balsam of Peru, extract of juniper, and Venice turpentine. In all these the worms lived more than twenty-four hours. Of the class of empyreumatics (brenzlichen stoffe), the following were tried:—Oleum chaberti [a mixture of four parts of oil of turpentine, and one of the animal oil of Dippel], oil of amber, castor-oil, tar water, creasote, wood-vinegar, and wood-soot. In these, for the most part, the worms lived from twenty-four to forty-eight hours; except the wood-vinegar, in which they lived rather more than twelve; and creasote, in which they died within two hours. Of bitters, the author tried aloes, gamboge, ox-gall, wormwood, myrrh, gentian, quassia, hops, bitter orange, and acorus calamus; in all these the ascarides lived from twenty-four to forty hours. Of astringents, pure tannic acid, pomegranate root, kousso, extract of walnuts, cinchona bark and quina, elm bark, willow bark, the flowers and stalks of meadow sweet, oak bark, dragon's blood, catechu, and kino. In these the

worms died in from twenty-four to thirty hours, with but two exceptions, namely, tincture of galls and pomegranate root, both of which killed them in the space of eleven hours. Of saline preparations, sulphate of soda, chloride of sodium, and the roe of the herring, were tried. In the first the worms died in from fifteen to eighteen hours; in the second, in from two to six; and in the roe of the herring, in four hours. The following metallic poisons were experimented on:—Arsenic, calomel, corrosive sublimate, and the salts of tin, of lead, and of copper. Corrosive sublimate alone destroyed the worms in so short a time as two hours; all the other metallic salts required a much longer period. From these experiments it would appear that santonine, mixed with oil, is the most powerful vermifuge, then chloride of sodium, the roe of the herring, garlic, onions, &c. The author advises that santonine should be given as a vermifuge; mixed with oil, in the proportion of from two to five grains to an ounce of castor-oil. This solution should be given in the doses of a tea-spoonful until the effect is produced. As auxiliary treatment, chloride of sodium, herring-brine, mustard, onions, and garlic, may be employed.—*Froriep's Tagsberichte über die Fortschritte der Natur- und Heilkunde.* Pharmakologie, Band 1, p. 317.

On the Action of the Subnitrate of Bismuth. By Dr. Filippo Lussanna.

The subnitrate of bismuth, a medicine already well known, has been lately used with new indications and pharmacological applications. Notwithstanding the fear which previously existed of its local caustic action, Monneret has recently recommended it in large doses as a topical [internal] anodyne in various gastro-intestinal affections, gastralgia, diarrhœa, dyspepsia, and cholerine. He, following the fashion of many of his countrymen, ignored almost every general action of this preparation, and declared that its therapeutic efficacy is purely local, and that, far from being irritating, it is absorbent and calming. Monneret has rendered much service to science, by destroying, so far as this remedy is concerned, the Orfilian scarecrows which still not a little impede the rational interpretation of pharmacological facts. But, at the same time, I do not believe that all his deductions are correct and true, when he entirely denies the general effects of this metal. Following his directions, I have administered the subnitrate of bismuth in the large doses given by him. The patients so treated were affected with tubercular diarrhœa, diarrhœa the consequence of chronic enteritis, gastralgia of long standing, and mesenteric disease. From the study of the effects of this remedy, I have been able to deduce the following inferences:—

1. It is true that it does not give rise to intestinal irritation.
2. I have not seen it arrest tubercular or mesenteric diarrhœa.
3. The fæces always acquired a blackish-yellow colour, owing to the unassimilated portions of the medicine being converted into sul-

phuret of bismuth by contact with the sulphuretted hydrogen of the fæcal masses.

4. The excrement, although still presenting the characters of diarrhœa, were always rendered less liquid in consequence of admixture with the powder.

5. The subnitrate of bismuth is in part assimilable, and some portion of the large quantity swallowed is really dissolved and absorbed. This takes place with many other medicines, of which only a portion can be dissolved and absorbed, while the remainder passes unacted on (when the remedy has been given in large doses), through the intestine. Such is the case with calomel, iron, and kermes, among metallic preparations.

6. The assimilation of the subnitrate of bismuth is due to the acid action of the fluids of the stomach, which render it soluble. Any portion that reaches the intestine, whether undissolved or dissolved, cannot be digested and absorbed, because the alkaline chlorides of the intestinal tube have no solvent effect upon it, and precipitate it if dissolved. In this second point of view, Monneret would be quite right in denying the effects of this salt on the economy in general, and in denying its absorption. The subnitrate of bismuth is soluble in acidulous matters, and, consequently, can be digested in the stomach. Thus we can understand how Trousseau and Pidoux, who also were ignorant of the general action of the salt, should, notwithstanding, caution us against administering it when gastric affections are attended with eructations,—in which, say they, "the medicine almost always fails;" since, by rendering it more soluble and assimilable, the presence of acid develops its dynamic action.

7. The non-appearance of the subnitrate of bismuth in the urine does not exclude the possibility of its having been introduced into the circulation. In fact, the subnitrate, having entered the current of blood, is, by the action of the alkaline chlorides of the serum, restored to the state of an insoluble subsalt, and thus becomes incapable of passing off by the uriniferous emunctory.

8. The effects of bismuth thus introduced into the economy are colliquative and scorbutic. The patient acquires a leaden aspect; the eyes become sunken, and present a livid subpalpebral circle; the breath is rendered offensive; the gums swell, grow livid, and discharge a sanious blood; hemorrhage is easily excited, and sometimes profuse passive hemorrhages arise. I had once under my care a case of a dangerous and repeated epistaxis produced by it in mesenteric tuberculosis. Sometimes blood is seen in the expectoration; finally, the alvine dejections are occasionally melenic. Everything announces a solvent action on the globulin, similar to that produced, according to the experiments of Dumas, by the chlorides of potassium, sodium, and ammonium, which dissolve blood corpuscles. It might be classed among Miahle's fluidifying agents.

9. Therefore, when we wish to prevent the absorption, or the

true medical action of the subnitrate of bismuth, to localize its action, and produce none but its mechanical absorbent effects, the rational mode will be to precede or accompany its administration by the exhibition of an antacid, as, for example, calcined magnesia, so as to neutralize and fix the solvent acid gastric fluids. And this, of course, will also be the *chemical* antidote of the preparations of bismuth, with the view of preventing their assimilation, while the preparations of iron and stimulants will be useful in counteracting their general or dynamic effects of producing scurvy,—fluidifying and dissolving the hematin.—*Gazzetta Medica Italiana Federativa Toscana*, 1852, p. 44.

[These observations of Dr. Lussanna, as to the effects of a medicine respecting the action of which much diversity of opinion exists, are, we think, highly important. By some physicians the subnitrate of bismuth is regarded as a remedy of very great power in chronic diseases of the stomach, even when given in comparatively small doses; while others consider it merely as an incumbrance to the Materia Medica, believing that it produces no effect on the animal economy unless it be administered in large doses, and then that its action is irritant and poisonous. M. Monneret, whose experiments are referred to by the author, gave from two to six drachms of it daily, without the production of any ill effects; in the diseases in which he employed it he always commenced its administration in such doses that two drachms were taken in the course of the day, and the quantity was rapidly augmented until six or eight drachms constituted the daily dose[a].—Ed.]

Case of Extra-Uterine Fœtation occurring in a Hernial Sac. By Dr. Skirvan.

An otherwise healthy woman, aged 38, had from childhood an imperfectly developed inguinal hernia of the left side. She had been delivered eight times without the occurrence of anything abnormal, except that on one occasion she had given birth to twins; however, in consequence of her labours being difficult, the hernia had gradually increased until it attained to half the size of a child's head. The patient suffered no other inconvenience from it than that occasioned by its bulk, and the hernia was easily reduced during her confinement to bed. In October, 1850, she experienced, while in the act of stooping, the sensation of a round body falling suddenly into the hernial sac; from that time the hernia steadily increased in volume, and the tumour became the seat of pains similar to those caused by a burn, which were relieved by cold applications. Two months later the patient perceived slight movements in the tumour, and Dr. Skirvan then saw her for the first time; he diagnosed an extra-

[a] Neligan's Medicines, their Uses and Mode of Administration. Third Edition. p. 433.

uterine pregnancy, but deferred operating. On the 24th of April pains set in; they extended from the sacrum to the hernia, and rapidly increased both in frequency and intensity. The patient having been put under the influence of ether, an incision five inches long was made in the fundus of the tumour, which now reached to the knee; the placenta was then observed covered with a sero-fibrous envelope three lines in thickness, the structure of which roughly resembled that of the uterus. The child was extracted living, with the membranes, but died in an hour after the operation. The wound soon closed, and the patient recovered completely; the hernia, however, continued as large as it had been before its occupation by the fœtus.—*Wiener Zeitschrift. Nouvelle Encyclographie des Sciences Médicales*, October, 1852, p. 261.

Special Pharmacopœia for Diseases of the Skin. By Alphée Cazenave, M. D., Physician to the Hôpital St. Louis, Paris.

(*Continued from* Vol. XIV., p. 505.)

Burdock is said to possess considerable efficacy in the treatment of scabies, favus, herpetic ulcers, &c. It has been recommended in syphilis as a diuretic and as a substitute for sarsaparilla, and is now also prescribed as a depurative in chronic affections of the skin. *Ptisan of Burdock.*—Sliced burdock, one ounce; boiling water, thirty-two ounces; infuse for three hours; strain, decant, and add syrup of capillaire, one ounce. The decoction is sometimes useful as a soothing lotion in pruritus.

Barium.—The preparations of baryta, recommended in a great number of diseases, have been employed in the treatment of syphilis and of certain chronic cutaneous affections, especially when connected with a lymphatic temperament, or a scrofulous complaint, as certain eczemas and inveterate chronic impetigos, but chiefly in some forms of lupus.

The chloride of barium, first recommended by Crawford, is chiefly used. It is a very energetic poison, and is difficult to manage as a medicine. The eighth of a grain is given dissolved in some mucilaginous fluid; the dose has been gradually increased to two or three grains daily. *Barytic Water.*—This has been employed mixed with olive oil, as a topical application in chronic cutaneous diseases in the impetiginous forms, in chronic eczemas of the legs, and to unhealthy-looking excoriations. *Chloride of Barium* (Professor Lauth's mixture).—Chloride of barium, three and a half grains; water, three ounces; Whyt's stomachic tincture[a], one ounce; for an adult. The quantity of chloride in the foregoing should be, for a child of six years, one grain eight-tenths; for one of four, one grain two-tenths; and for one of two years, six-tenths of a grain. A table-spoonful of

[a Yellow bark, three ounces; gentian root, outer rind of orange, of each, one ounce; digested for six days in a pint and a half of rectified spirit, diluted with half a pint of cinnamon water.—Ed.]

the mixture to be given some hours after breakfast. *Pills.*—Take of chloride of barium, nine and a quarter grains; dissolve in half a drachm of distilled water; add, of powdered gentian, two drachms; powdered gum Arabic, half a drachm; and simple syrup, a sufficient quantity; make into ninety-six pills (Foy): Uses, the same as of the preceding preparation. The chloride of barium is generally combined with ferruginous preparations, and especially with hydrochlorate of iron; Hufeland in particular has extolled the efficacy of this combination. *Solution of Chloride of Barium and Hydrochlorate of Iron.*—Take of hydrochlorate of iron and chloride of barium, of each, half a drachm; distilled water, ten drachms; dissolve. Dose: from twenty to sixty drops. *Use*, the same as of the preceding.

Balms.—*Baume Chiron ou de Lausanne.*—Take of olive oil, ten ounces; Venice turpentine, two ounces; yellow wax, one ounce; alkanet root, half an ounce; boil together, strain and add of balsam of Peru, two and a half drachms; camphor, nine and a quarter grains; stir constantly until cold. Employed to promote the cicatrization of chapped nipples and broken chilblains. *Balm for Chilblains.*—Take of rectified spirit of turpentine, one drachm; sulphuric acid, fifteen grains; olive oil, two and a half drachms: mix. To be rubbed night and morning on unbroken chilblains. *Goulard's Balm* (Oil of Saturn).—Take of essential oil of turpentine, any quantity; heat it *secundum artem*; decant, &c. Used for dressing phagedenic ulcers, ecthyma, some chronic eczemas, and rupia. *Plenck's Mercurial Balm.*—Take of mercury, one ounce; Venice turpentine, half an ounce; lard, three ounces; calomel, seventeen grains and three quarters; elemi ointment, three ounces: mix. Used for dressing venereal ulcers.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*Account of a very remarkable Case of Double Monster; with some Observations on the subject of Double Monstrosity.* By WILLIAM F. MONTGOMERY, A. M., M. D., M. R. I. A., President of the King and Queen's College of Physicians in Ireland, and Professor of Midwifery in the School of Physic[a].

THE subject of double monstrosity, fully treated, is one of such "ample scope and verge," that even a rapid glance at the numerous details involved in it would be an enterprise not to be circumscribed within such limits as the present occasion legitimately affords, and would not, moreover, answer the object I had in view when I proposed to myself to describe a very remarkable specimen, which, through the kindness of a friend, was recently presented to me for examination and preservation in my museum.

Subsequently, it occurred to me that I might, perhaps, invest my theme with somewhat more of interest and practical value, by giving a short account of some other cases of a somewhat similar kind, which have, from time to time, been met with in this country, and alluding still more briefly, for the sake of comparison, to one or two occurring elsewhere.

[a] Read before the Association of the College of Physicians.

With such intention, then, I propose to notice very shortly, first, the circumstances attending the birth of these monstrous productions, as a knowledge of them may, one day or other, tend to assist some of us in practice, should such anomalous cases present themselves for our management.

Secondly. To dwell for a moment on the physiological history of some of them, which afforded opportunity for observation; and—

Thirdly. To inquire into their anatomical structure where known, so far, at least, as regards certain remarkable peculiarities which some of them have presented.

In that age of refinement when Cicero captivated the crowded forum by his eloquence, and by his writings sought to instil a more enlightened philosophy through all mankind, each monstrosity was regarded as the special harbinger of some approaching calamity, and hence their name, derived from the verb *monstrare.*

Lycosthenes went so far as to add to the description of each monster the picture of the misfortune which was to be its sequel.

Even so lately as the sixteenth century, and probably later, some writers of authority did not scruple to attribute their production to a supernatural influence. Rueff, in 1580, formally discussed the question—"An homines ex dæmonibus, et rursus dæmones ex hominibus infantes concipere possunt." He, however, as well as Casparus Schottus, declared in favour of the negative.

Various other theories of their etiology were proposed by other writers, upon which I do not propose to enter; suffice it to say, that while some of them were simply ridiculous, others were disgusting, and all unsatisfactory.

A late excellent writer on this subject, Vrolik, says that the opinions concerning the origin of monstrous births may be reduced to two—namely, that which attributes them to the original malformation of the germ, and that which ascribes them to the subsequent deformation of the embryo, by causes operating on its development. Now, really as regards any explanation of so mysterious a subject, this seems to amount to little more than saying that the general opinion at present is, that monsters are born monsters either because they were originally so formed, or became so afterwards; but it is only candour to admit, that although modern investigations have disclosed to us many facts, from which we have been enabled to establish such a constant connexion between certain abnormal or morbid conditions of the envelopes and appendages of

the ovum, and monstrous deformities in the fœtus, we feel justified in regarding the latter as effects resulting from the former; still it must be confessed, that of the original causes of these conditions, or of the mode in which they lead to such consequences, we know but very little; and that this question, like many others concerning reproduction, is one of those which as yet we only "see through a glass darkly;" and on this particular subject it has been happily but too truly observed by Geoffrey St. Hilaire, that "the sources of investigation diminish as the difficulties increase"[a]. It would, then, I think, be a task as unprofitable as it would be unnecessary to my professed object in this communication, to enter at any further length into an examination or review of the endless speculations which have been promulgated on this part of the subject.

Neither is it my intention to offer anything like an enumeration of the different classes into which the ingenuity of authors has divided and subdivided these monstrosities, but to pass at once to the subject of "double monstrosities," and allude to certain groups of them which I have met with, and possess specimens in my museum; or which, for other reasons, have more particularly interested me.

First. Under the head of double monsters, or monsters by cohesion, should be ranked those in which one fœtus has been included within another, which latter may continue to live some years.

Of this form was the remarkable case of the boy at Sherbourne, in Dorsetshire, who lived to the age of sixteen years with a fœtus in his abdomen, which was contained in a pouch connected with the mesentery and colon. The fœtus and appendages were exhibited in London in 1814, and afterwards placed in the Museum of the Royal College of Surgeons, where the writer saw them, and where they still remain; and a full account of the case, illustrated by engravings, was published by Mr. Highmore, in 1815.

In Mr. Young's case[b] the boy lived nine months; and the boy, Amedée Bissieu, whose case is reported by M. Dupuytren, in the Memoires de la Faculte de Médecine de Paris, lived thirteen years with a fœtus in the abdomen[c].

Secondly. Those which have been named Heteradelphi, or double monsters, in which one of the fœtuses is more or less perfect, and the other, or part of another, merely an appendix to it.

[a] Anat. Philos. p. 156. [b] Medico-Chirurgical Transactions, vol. i.

[c] For a full account of this case see vol. iv. p. 294, of the First Series of this Journal.

Beings thus formed have rarely lived many years; perhaps the most remarkable is the Chinese A-Ke, whose figure is well known. The life of such a parasite is in general only vegetative, and the parasite does not in general appear to possess the power of voluntary motion, or distinct sensation: in the case of A-Ke only, had the man who bore the parasite any voluntary power over its limbs[a].

For a remarkable instance of this class we are indebted to Dr. Bardsley, of Manchester; it is of the same kind as the Chinese A-Ke, one child being perfect, and the other a mere appendix. Dr. Bardsley, in his Retrospective Address to the Provincial Medical and Surgical Association, in 1837, thus alludes to it: "The wife of a labouring man, at Staleybridge, near Manchester, gave birth to a monstrosity, apparently the result of an abortive effort of nature to effect the formation of twins. This *lusus naturæ*, having only one head, is possessed of four arms and four legs; the sex is masculine, and the organs of generation are double." When Dr. Bardsley spoke as above, the child was living, was two months old, and "in the seeming enjoyment of excellent health;" and in a letter which I had the pleasure of receiving from him a few days since, he informs me "that it lived for rather more than a year," and that "its birth was easy," but the parents having left the neigbourhood of Staleybridge, he was unable to ascertain any further particulars of its history.

The appendix may consist of a head only, which may be variously attached. In the preparation, No. 194, in my museum, there is a second head attached by union of the two faces, the mouth being in the angle of junction, and an eye at each side. The child is preserved in the uterus, the mother having died before labour came on.

In the case of Lazarus Colloredo, described by Bartholinus, the appendix had a body with a head, and four extremities: he lived for some time, and although the appendix took no food, nor discharged fæces, its organic and animal life seemed tolerably perfect; it slept, moved the different parts of its body, and had cutaneous exhalations.

Thirdly. Double monsters by anterior duplicity, "whose distinctive characters are, that two bodies in a state of nearly equal development are placed exactly opposite to one another, with their sterna connected together, and with their abdominal cavities either partially or completely coalesced"[b], as in my present case, which may be considered as only a superior form of the most complete Heteradelphi; and in Cruveilhier's, which I shall notice hereafter.

[a] Vrolik. [b] Vrolik.

"Double monsters," says Vrolik, "form, collectively, one class of organic beings, which, however different in their several degrees of malformation, may be arranged in one continued series. As the lowest degree of duplicity, may be mentioned that of a single part of the body; for example, a double or supernumerary finger: as the highest, a complete double monster, with two heads, four upper and four lower limbs, and two trunks, such as the *Siamese twins*. And between these two extremes, there are different forms of duplicity, which gradually run one into the other."

And I think it right to add, in the words of the same writer, that "there is no positive or constant relation between the external and the internal organs as to their degrees or modes of duplicity."

Fourthly. Double monsters by inferior duplicity.

These are united at the pelvis, and have two bodies, four separate superior extremities, four separate inferior extremities, —the Ischiadelphi of Dubreuil. Of these, I shall notice two remarkable instances: one of which occurred at Boyle, in the county of Roscommon, and the other at Thomastown, in the county of Kilkenny.

Fifthly. Lateral duplicity, in which the two bodies are not, as in anterior duplicity, set opposite to each other, but are turned sideways from one another, and have a common thoracic cavity. Of this class there are several subdivisions, into which I will not enter, but merely say that, as illustrations, we may take Dr. White's case, which occurred at Carlow, and Ritta-Cristina.

Sixthly. Posterior duplicity, in which two bodies are united by their backs or some part of them, as at the pelvis, at the back of the vertebral column, or back part of heads, or by the nates, as in the celebrated case of the Hungarian sisters, Helen and Judith.

Seventhly. Superior duplicity, in which the two children are united by their heads, the bones of which form a single skull, the *sycephali* of some authors. These are very rare. A case of this kind occurred some years ago at Malta, of which I have a cast (No. 44) in my museum.

Having premised these few general observations, I shall proceed, with the already stated objects in view, to describe some singular cases which have from time to time occurred in this country, as well as to notice one or two of peculiar interest, from other sources, before giving an account of the remarkable double monster which lately came under my observation.

Thomastown Case.—Complete Double Child.

Case No. I. Sunday, January 3rd, 1808. Dr. Alcock of Kilkenny was called to visit Mary Cahill, about thirty years of age, in labour of her third child since Friday; she had in each of her former labours one perfect child. He found a child's head born, and had been so from the evening before, but no further progress was making, though the labour had been severe all night: the protruded head was much swollen and quite black; the pulse was much sunk, and the woman greatly exhausted, two robust midwives having freely used their united exertions to pull away the child.

Dr. Alcock brought down the arms without much difficulty; but found the rest of the body quite immovable, and soon discovered a third arm apparently growing from the same body; this disclosed the nature of the case, and convinced Dr. Alcock that the only chance of delivery was to remove as much of the presenting part as could be got at, return the remainder, and bring down the feet of the second child.

As the woman was much exhausted, Dr. Alcock sought the assistance of Dr. Pack, and, having drawn down the protruded part of the child as much as possible, Dr. Pack divided the body between the diaphragm and stomach, which was, as afterwards appeared, exactly where the union with the second child commenced. The second child was then turned, and the entire brought away. The placenta soon followed, and all seemed as well as could be expected; but the woman was seized with a vomiting in the course of the night, and died before morning. No examination of the children could be obtained: the bodies were placed at right angles to each other, and they had a common abdomen; there was but one umbilical cord, which sprang from the centre of the abdomen: the placenta was such as is usual with a single child[a]. (See Plate I. Fig. 1.)

This monstrosity, as also the next to be noticed, belongs to the class named by Dubreuil Ischiadelphi, as far as the union of the pelvis is concerned, but differs from the general law[b] that the attached limbs partake of the peculiarity of the part to which they are attached, the lower extremity being quite separate and well formed.

[a] Dublin Medical and Physical Essays, vol. ii. p. 33.
[b] Cruveilhier, Anatomie Pathologique, liv. xxv. p. 2.

Fig 1.

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Fig. 2.

Double Child born at Boyle.

Case No. II. It consisted of two bodies in a direct line, united at the pelvis. The mother, Catherine Corcoran, resident at Boyle, County Roscommon, was a very healthy woman, thirty years of age, and, previously to giving birth to this monster, had borne five well-formed children, no two of which were twins. In this instance her labour was not attended with any unusual difficulty. This monster was born on the 24th of July, 1827, at 2 o'clock, A. M., and lived until the 26th, at 2 o'clock, P. M. It appeared to have nearly reached the full period of nine months. It had a head at either extremity; two chests, with arms complete; two abdominal and two pelvic cavities, united end to end, with four legs placed two at either side, where the union between the pelves occurred. (See Plate I. Fig. 2.) There was only one anus, situate between the thighs of one side; and on the same side the urinary bladder opened above the pubis; there was only one placenta, and one umbilical cord, which entered at the unnatural opening from which the urine was discharged.

The infants were baptized as two: one, having dark hair, was named Mary; the other, fair-haired, was called Catherine: and each in its feelings and actions appeared independent of the other; sometimes both cried together, at other times one cried while the other remained tranquil, but generally they were both disposed to be quiet, unless when excited by exposure to cold air in gratifying the curiosity of neighbours: and it would appear that the gratification of this curiosity was the principal cause of their untimely death. They each in succession sucked from the breast, and each, in like manner, frequently took milk from a spoon; they both vomited very often, and the act of vomiting in one was not always attended with similar disturbance in the other; their fæces were discharged from a common opening, and the urine of both flowed from the same imperfect bladder. They both used their limbs very vigorously, and the feet of one were extended along the sides into the arm-pits of the other. Life departed from Mary about ten minutes before the death of Catherine.

Skeleton.—The heads, upper extremities, and chests of both fœtuses were perfect and equal in size; all the bones constituting two pelves were well developed, but joined together in a curious manner: the coccyges overlapped each other laterally, and, in the recent state, the spinal marrow was continued from the extremity of one sacrum into that of the other, making an

inseparable union at this point. The pubic bones were united by symphyses, but not in the usual way: the left pubis of one fœtus was joined to the right pubis of the other on one side, and *vice versâ* on the opposite side; the thigh bones, which were articulated, two on each side, to these pelves, belonged of course to their respective fœtuses. The arrangement of the skeleton was such, that if the coccyges were separated, and the pubes disunited at their unnatural symphyses, a perfect pelvis and two perfect lower limbs might, by a new arrangement, be formed for each infant[a].

I may observe that this case is taken by Professor Vrolik as the type of a class, Inferior Duplicity, and the figure of it in my article, "Fœtus," in the Cyclopædia of Anatomy and Physiology, vol. ii. fig. 146, is referred to by him as an illustration.

Double-Headed Fœtus.—Carlow Case.

Case No. III. March 3rd, 1839. Dr. White was called to a woman in labour of her eighth child; and found the lower extremities and nates of a female child already protruded. In trying to bring down the arms, he was surprised to feel two mouths and noses, and a division in the neck, into which his finger readily passed.

It was found impracticable to effect the delivery of the heads by manipulation; and as symptoms became pressing, Dr. White introduced the perforator through the palate, and having reduced the size of the head, he fixed a hook in the foramen magnum, and, with the assistance of Dr. Porter, extracted the double-headed child. There supervened so much hemorrhage, that manual removal of the placenta became necessary; after which, the uterus contracted favourably.

The child appeared to be of the full time, and rather larger than usual. About the fourth or fifth cervical vertebra the neck was divided into two, each supporting a well-formed head; these were considerably flattened where they touched, and the ears there placed were rather larger than those outside. The eyes of each head were of the natural size, and perfectly formed, as were most of the other parts about the head; the chest and abdomen were larger than usual, and on the back the spinous processes of two vertebral columns could be distinctly traced, gradually approximating towards the sacrum; and there was a sharp spine of bone almost bursting through the skin, growing from the right side of the sacrum. (See Plate II. Fig. 1.)

[a] See Catalogue of the Museum of the Royal College of Surgeons of Ireland, vol. i. p. 148.

Fig 1.

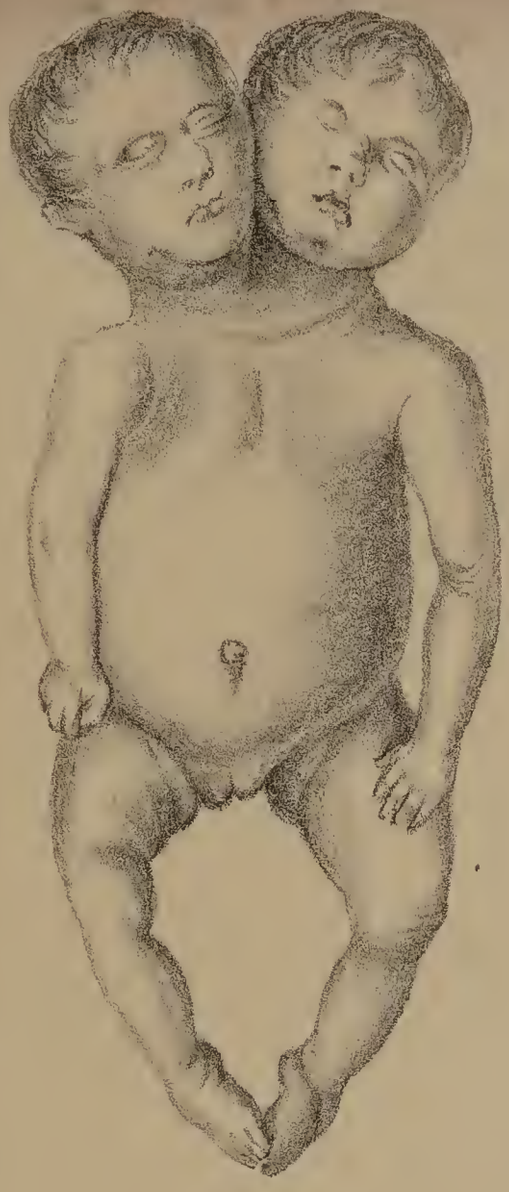

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Fig: 2.

The placenta had a large lobe attached to it. The measurements of the monster were as follows:—Length of child, 18½ inches; breadth across the shoulders, 7; breadth across the heads, 8; length of arm, 8; girth of lower part of chest, 14.

The child was buried unexamined, but was exhumed twelve days afterwards, and examined, but not satisfactorily. The following particulars were, however, ascertained. There was but a single pair of lungs, of the usual size, and placed rather posteriorly, the heart encroaching much on their position. The latter organ was very large; its *auricles* appeared natural, but there were *three ventricles*, one in the centre, and behind the other two; from this arose the pulmonary artery, and from each of the two anterior ventricles arose an artery. That from the right subdivided into three, which were distributed to the right head and arm,—that from the left gave off three branches for the left head and arm: its continued trunk appeared to be the aorta, and to supply the remainder of the body. "In short," says Dr. White, "it seemed as if to a normal heart, intended to supply the left head and body, an additional ventricle was superadded for the right head and arm[a]. The two anterior ventricles appeared to communicate through their septum." Behind the heart, contained within a serous sac, was a fleshy mass, in shape something like the spleen, but of the colour of the heart; in texture, it was like hepatized lung; it had no cavity in it. An œsophagus was traced from each pharynx; the left one was in its usual place, and the right one more anterior, and to the right of the bodies of the vertebræ belonging to the right head and body; each œsophagus terminated in a distinct stomach. The left stomach was in its usual position, the right one reversed, its large extremity being towards the right. The two stomachs united at the pylorus and opened into a common duodenum, and from thence downwards the intestinal canal was single. The liver was enormously large, as was also the colon: the bladder and uterus single; the bodies of two separate spinal columns could be felt through the chest and abdomen to the sacrum, with a space between them, into which a large quill could be laid[b].

It seems highly probable that in this case, had the heads presented, delivery might have been accomplished by the natural efforts, though with much difficulty: one head might have been pushed down after the other, as did actually happen

[a] If the communication existed between the ventricles it would virtually reduce the number of ventricles from three to two, and otherwise alter the action, &c., supposed by Dr. White.

[b] Dublin Medical Press, 1839, vol. i. p. 212.

in the case sent to me by Dr. Brabazon, in which the labour was accomplished with very little obstruction,—labour being almost the only act, which, to use a common phrase, is best done "*head foremost.*"

Suppose this child to have been born alive, why might it not have lived as well as the well-known monster, *Ritta-Cristina*, which survived more than eight months; or the still more remarkable two-headed man mentioned by Buchanan, who lived to be twenty-eight years old, in the reign of James III. of Scotland?

Case of Double Monster born at Belturbet.

Case No. IV. March 6th, 1851. Mr. O'Donovan was called to Mrs. L., aged 35, mother of three children, and seven months pregnant of her fourth, in very delicate health; her abdomen enormously enlarged, having the appearance of a twin pregnancy in the ninth month; lower extremities œdematous; and she was exceedingly weak and dispirited; former pregnancies favourable.

11 o'clock, P.M., labour set in rapidly. Mr. O'Donovan found the membranes ruptured and the room deluged with the waters; the feet and legs of a child were protruded, cold, and livid; at the orifice of the vagina appeared what at first seemed a hand, but being pushed down it was found to be a third leg, then a fourth leg was discovered and brought down.

By passing the finger round the fœtus, Mr. O'Donovan found that the body was single at the umbilicus, the cord lying in the cleft, and a portion of intestine protruding. He assisted the pains, which were few and weak, gradually drew down the body, and, having hooked down the arms, delivered the woman of a full-grown monster fœtus, with two heads and two sets of extremities; the placenta soon descended and was removed; the heads passed one after the other, moving, as it were, on a central point, the junction at the neck. There was imperfect contraction of the womb, and a tendency to hemorrhage, which, however, Mr. O'Donovan was enabled to prevent by the usual means, and the mother ultimately did well.

"No description," says Mr. O'Donovan, "can convey an idea of the horrible appearance of this monster: the heads taken together were much larger than the head of a full-grown healthy child, and were fully developed; the faces fronting and applied to each other, the mouth of the one being received into that of the other, which was a large chasm, the line of junction commencing at the lower lip and continuing perfect to the umbilicus; the thorax of each was well formed and distinct

except for the juncture; at the dorsal vertebræ, and opposite the umbilicus, the bodies were drawn towards each other as if compressed by a cord. (See Plate II. Figure 2.) The gross bulk of the double monster was equal to that of a single child of nine months; each head was as fully ossified as a natural fœtus of the same age, that is, seven months. The abdominal parietes were deficient at the junction of the funis, where there existed only a thin diaphanous membrane, as if an expansion of the sheath of the cord itself; the arms of the children embraced each other in the form of a figure of 8. The placenta was about the natural size, part apparently healthy, but nearly a third *presented a vast collection of hydatids.* No examination would be permitted"[a].

Mr. O'Donovan has lately informed me that the lady was again confined last month (February), under his care, of a healthy, full-grown, female child, and had a most favourable labour.

I may observe, in reference to this case, how often anomalous or morbid states of the cord or placenta are, as indeed we might anticipate, found in connexion with malformations or monstrosities of the fœtus; hydatid degeneration of the placenta is often met with, not only accompanied by extreme atrophy of the fœtus, but frequently no trace of it is left remaining.

One of the ugliest and most disgusting looking monsters I ever saw was connected with an enormous placenta, whose substance was quite unravelled, and the separate branches of capillaries hung down like minute stalactites, at least two inches long, while the twin brother of this monster was a comely child, attached to a healthy placenta and cord.

Such a relation between morbid anomalies of the placenta and malformations or monstrosities in the fœtus must cease to surprise us when we consider that the placenta is, in fact, the organ or apparatus by which the whole *pabulum vitæ* is supplied for the development and support of the child during its intra-uterine life, and if this supply is tainted at its source, or interrupted by morbid changes therein, we can readily understand to what a degree the evolution of the embryo is likely to be thereby affected.

Hence it is, that in those perplexing cases so frequently met with, in which women are, in several successive pregnancies, delivered of dead children, without any discoverable constitutional disease or infirmity in the mother, an examination of

[a] See vol. xii. N. S. of this Journal, p. 482.

the placenta so frequently discloses to us morbid alterations quite sufficient to explain the distressing result. Of these I may just allude to what has been called tubercular disease of the placenta, apoplexy of its substance, hydatid degeneration, inflammation of the placenta or envelopes of the ovum, and especially if producing their adhesion to the surface of the child.

In another instance under my observation, the cord was excessively dropsical, so as to be in some parts two inches in diameter, and in that case the child was unequally developed, one side of the body being very much larger than the other: this inequality, however, gradually disappeared, and the young lady is now of unexceptionable symmetry. "In one of the recorded cases," says Vrolik, "the superior extremities were wanting, and the anus was closed."

Serres considers the absence of one of the umbilical arteries as the efficient cause of that form of monstrosity in which there is *ectopia viscerum abdominalium*, but such a consequence does not always follow such a defect. I have in my museum a specimen of a placenta and umbilical cord with only one artery, and it was connected with a remarkably fine, healthy, and well-formed child[a].

This want of one umbilical artery was also observed in Sir A. Cooper's imperfect and heart-less fœtus, but, with the exception of an umbilical hernia, there was no other ectopia viscerum abdominalium.

I have for many years endeavoured to impress on my pupils the great advantages to be gained not only in the way of general pathological inquiry, but in the acquisition of a particular species of knowledge of the utmost practical value, by carefully examining the fœtus and its envelopes in every case, but especially in those cases of blight or arrested development, where the size of the fœtus is so entirely at variance with the real date of the pregnancy, a mistake on which point may lead, and has so often led to giving an opinion which may irreparably injure a really unblemished reputation.

The following case, which was recently brought under my observation, is a striking illustration of the above remark. Five months after her husband's departure for a foreign country, a lady miscarried of an ovum and fœtus, presenting the characters and development of the third month: for more than two months and a half after the separation of the parties she had no menstruation, and had other indications of pregnancy;

[a] See also Vrolik, Cyclopædia of Anatomy and Physiology, vol. iv. p. 947-8.

but she then had sanguineous discharges from the vagina, which were regarded as a return of her catamenia, and she was no longer considered pregnant. These, however, ceased, and there was again a suppression for two months and a half, at the end of which time, the lady miscarried of an ovum and fœtus, presenting conditions corresponding to such a period; the result of which was a conviction, on the part of some members of her husband's family, that she must have been unfaithful to him, and it was at once decided to inform him of his misfortune. Before doing so, however, the ovum was shown to a medical friend, who, wishing to have his own judgment in so delicate a matter fortified by the opinion of another, submitted the ovum to me for careful examination, when the true nature of the case appeared at once manifest: the envelopes were in a morbid state, thickened and tuberculated, and had evidently been long separated from their vascular connexion with the uterus; the umbilical cord also was diseased at its placental end, where it was expanded into a lotus-shaped sac, filled with a brownish serum. Of the true history of the case there seemed then no doubt: the lady had conceived just at the time of her husband's departure, her pregnancy had proceeded undisturbed until the third month, when she had symptoms of miscarriage, but did not miscarry; but the ovum was blighted, and, having lost its vitality, ceased to grow; it was, however, retained in the uterus until the expiration of five months from the date of conception, when it was expelled in the morbid state already described. This explanation at once set at rest all the unworthy and undeserved suspicions entertained against this innocent lady, who would otherwise have been made the subject of a most painful proceeding. Facts of this kind have been heretofore insisted on by the writer in his work on the Signs of Pregnancy, and some cases related in illustration[a].

Double Fœtus, described by Cruveilhier[b].

Case No. V. M. Jolly was called to the mother when she had been eight hours in her third labour, and found the head of the child born three hours, but the body could not be got down; the face was turned forwards; the cord was round the neck, empty, and without pulsation: child evidently dead.

M. Jolly ascertained with difficulty that there was a double fœtus; he disengaged the arms of the one whose head was al-

[a] Pages 96 and 209.

[b] Livraison xxv. pl. 5, 6.

ready expelled, then, carrying the head upwards and forwards, he brought down the back, the nates, and the feet; and then, seizing the nates of the second infant, he extracted it in less than a minute; neither showed any sign of life, though it appears that the first was alive up to the moment of the expulsion of the head: both were females. The mother did well. The adhesion was anterior from the umbilicus upwards to the top of the sternum; a single cord ended at the common umbilicus, where there existed a hernial protrusion, with its investing membrane ruptured, probably in the act of delivery.

Thoracic and Abdominal Viscera.—Sternum distinct. Each fœtus had its own thymus, and two lungs, but the two hearts were blended into one, which lay horizontally, the right half being contained in the thoracic cavity of the right fœtus, and the left half in the thoracic cavity of the left fœtus; there were four auricles opening into each other, and two ventricles, from each of which arose both an aorta and a pulmonary artery.

Two stomachs for each fœtus respectively, two duodenums, ending in a single jejunum, which afterwards bifurcated and passed into a large intestine belonging to each fœtus, with appendices vermiformes, &c.; two pairs of kidneys and suprarenal capsules, two bladders, two uteri and appendages. The liver was apparently single, but in reality two livers joined, one being anterior and the other posterior, each receiving an umbilical vein, and having a gall-bladder of its own.

The pulmonary arteries had each only two valves.

These two fœtuses had their circulation in a condition like that of fishes, their ventricular circulation being distinct, and their auricular circulation common. In the published account of this case (*op. cit.*) there is an inaccuracy in the description of the cord and its constituent vessels; at page 2 it is said that there were "two cords which were separate throughout their whole length, but re-united on the placenta;" and at page 3 it is stated, that "the cord was single, and terminated at the common umbilicus;" but in a letter with which this distinguished pathologist has very kindly favoured me on the subject, he informs me that the above statement was inaccurate, and should have been, that "the two cords, which were united throughout their whole length, separated on the placenta." He adds, that "the single cord was composed of four umbilical arteries and one umbilical vein, which bifurcated at the one end at the placenta to form the vein of each cord, and at the other end bifurcated in the abdomen to go to each of the united livers."

The placenta was single.

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PLATE 3.

Fig 1

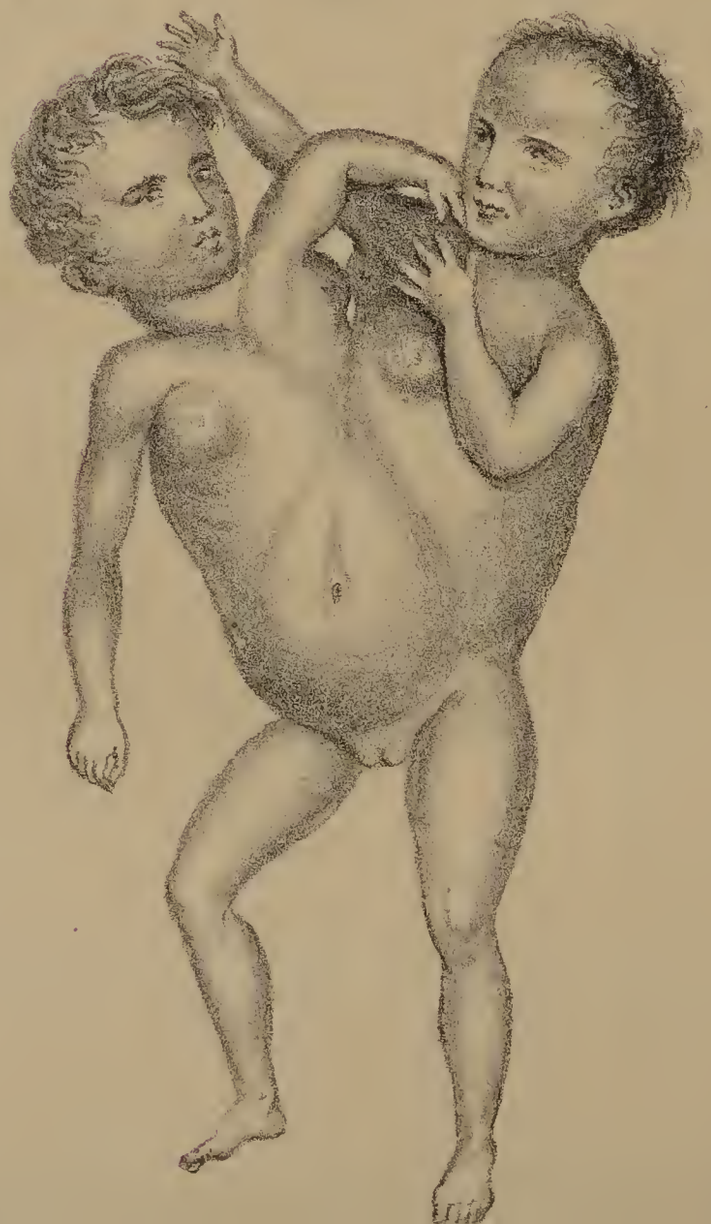
Helen.

Judith.

Fig 2

Ritta

Christina



The Hungarian Sisters—Helen and Judith[a].

Case No. VI. Double female monster, united by the nates and part of the loins (see Plate III. Fig. 1), which condition was attributed to the force of the mother's imagination while carrying them—"Attentius canes contemplabatur coëuntes, arctius cohærentes, et capitibus erga se invicem quodammodo conversos, eosque sibi crebrius præfigurabat."

They were born at Szony, in Hungary, 26th October, 1701. Helen was born first, as far as the umbilicus, and after three hours her feet passed, and then the body of Judith,—nates first, it is to be presumed.

In their sixth year Judith was attacked with paralysis of the whole left side; and although she recovered, she was ever after weaker, less active, and more dull. Helen was active, more sprightly, and intelligent. Both are described as very handsome.

Menstruation was established in their sixteenth year, and continued regular all their life, but did not occur in both at the same periods.

They had measles and small-pox at the same time, but other illnesses did not occur to both together. When venesection was required for either, it was always performed on Helen, as being the stronger.

They were shown through almost all the countries of Europe for seven years. They exhibited a great disposition to learn, and spoke Hungarian or High Dutch, Low Dutch, and French, and were learning English.

They could not walk side by side, and when one went forward, the other was obliged to go backward; when one stooped to take up anything, she raised her sister quite from the ground, and carried her on her back, which Helen often did, as being stronger, and more lively than the other. They had not their feeling common anywhere but in the place of their conjunction.

There was but one vulva, hidden inferiorly between the four thighs. The vagina was at first single, but soon divided into two distinct canals, and all the other sexual organs were distinctly double. In like manner there were two separate intestinal canals, terminating in a common extremity; and the desire of discharging the fæces was felt by both simultaneously; but not so with the urine, which caused sometimes disputes, though in general they were fond of each other.

[a] Philosophical Transactions, vol. l. p. 311.

The two vertebral columns were united by the second piece of the sacrum, and they terminated in a single coccyx. The two aortæ and venæ cavæ anastomosed inferiorly at the situation of the iliac vessels, and thus established a large and direct communication between the two hearts, producing, of course, a great community of life and functions.

Their mental and nervous systems seemed to have little communication, for one often slept while the other was awake, and one was sometimes occupied in reading or writing, while her sister was in a state of profound repose.

On the 8th of February, 1723, Judith died of disease of the brain and lungs, at the age of twenty-two. Helen took ill with slight fever soon after the commencement of her sister's illness, and suddenly sank into a state of collapse, preserving, however, her mental faculties. After a short struggle she fell a victim to the death of her sister, and both expired almost at the same instant.

Ritta-Cristina[a].

Case No. VII.

This remarkable double monster was born at Sassari in Sardinia, 12th March, 1829. (See Plate III. Fig. 2.) The mother was well formed, and had previously borne seven perfect children; in the birth of Ritta-Cristina the labour was not attended with difficulty; the heads presented, and each head was separately baptized and named; they were brought to Paris, and there publicly exhibited, which is said to have hastened their death. It is rather amusing to know that the public authorities interdicted their exhibition except under most stringent restrictions, for fear that it would open a door for psychological speculations and discussions[b].

On examination after death the two vertebral columns were found separate in their whole length, and a rudimentary pelvis, formed of a single bone, separated them inferiorly. Another fully developed pelvis was situated in its natural position, and

[a] Serres, Anatomie Transcendentale.

[b] " L'apparition de Ritta-Cristina à Paris a éveillé l'attention de l'autorité, qui a cru que cette *bicéphalité* pouvait ouvrir la porte à des discussions psychologiques; elle s'est donc empressée d'en interdire l'exposition publique, ou du moins elle a mis dans sa permission de telles restrictions, qu'elle équivaut presque à une défense. Le Vicaire de Sassari a été plus décisif il n'a consulté ni théologiens, ni naturalistes, ni physiologistes; il a vu deux têtes et quatre bras sur un corps féminin; il a donc baptisé deux filles; il a pensé qu'en n' accordant le baptême qu'à une seule, il eût pu manquer à ses devoirs religieux, et avoir à se reprocher un jour la damnation de l'une d'elles. Nous n'entrerons point dans de pareilles discussions, notre but n'ayant été que d'examiner ces monstruosités dans leurs rapports avec les sciences naturelles."—*Revue Médicale*, 1829, vol. iv. p. 240.

supported two well-formed abdominal limbs; the ossa innominata were widely separated posteriorly, so as to include between them the two sacra and the rudimentary pelvis: there were only eleven ribs at each side; the lower limbs were remarkably meagre and ill nourished.

There existed a single bladder, uterus, and rectum, which were common to the two subjects, but behind these organs were found rudimentary traces of others.

There were two distinct hearts in one pericardium, which touched at their apices; all the other thoracic and most of the abdominal viscera were double; examination by the stethoscope indicated only a single heart.

Many interesting observations were made on this monster during life; the nervous systems seemed to have but little communication, except in those parts which were in the line of union, as the anus and sexual organs; for if the right limb was pinched, or the sole of the foot tickled, Ritta only felt it; and if the left, only Cristina; so that of the common pair of limbs, the right seemed to belong to the one individual, and the left to the other. And this was verified on dissection; for the spinal cords were found to be quite separate, and there was no communication between the nerves forming the nervous trunks going to the two abdominal limbs; the only union between the nerves of the two beings was found in the parts in the line of junction. One would sleep while the other remained awake sucking; or smile while the other cried, or was quite tranquil.

The two creatures experienced the sensation of hunger at different times, but felt the desire to expel the fæces at the same time. This might be expected from the structure of their alimentary canal, which was double as far as the commencement of the ilium, and single in the rest of its course. There was an anastomosis of the iliac arteries belonging to each.

There was a remarkable difference in the expression of their countenances: Cristina being of a gay and happy look, while Ritta looked sad and melancholy, as if suffering, which was the fact.

They died at Paris, 23rd November of the same year, having lived eight months and eleven days; and I believe their survival for such a length of time constitutes an exception to the history of double monsters with two hearts in one pericardium. The account of their last moments is deserving of mention. Ritta, who had always been feeble and ailing, at last became very ill for some days before her death, but during

those days, Cristina continued in perfect health, was gay and merry, and was playing in her mother's arms when Ritta breathed her last, but on the moment, Cristina screamed out and instantly expired. It was remarked also that she became cold and rigid in a few minutes; but that Ritta became so only at the end of eight hours.

The same authority which objected to their exhibition while living wished to prevent their examination after death, and ordered their burial within twenty-four hours; and it was only at the urgent solicitation of M. Geoffrey St. Hilaire and others, that permission could be obtained for delay, in order to investigate their organization.

Case No. VIII.

Sir Astley Cooper has left us the history and examination of a monstrous acardiac fœtus[a], and its connexion with its twin brother, to which I wish to refer, as its history embodies the fact of community of circulation; which fact, though under much more singular and remarkable circumstances, constitutes the most curious feature in the structure of the double child, which is the principal object of this communication.

In Sir Astley's case the placenta was composed of a single mass, but it was divided by the membranes into two cavities of unequal magnitude, the larger of which contained a well-formed, and the smaller an imperfect, fœtus. These two cavities were perfectly distinct from each other, although seated on the same placenta. The septum, or separation between the two children, was formed by the combined membranes of each, there being separate membranes, but only one placenta for the two children; for although there was a funis to each fœtus, the one funis freely communicated with the other, by means of a large umbilical artery and vein, so that when the heart of the perfect fœtus acted, the blood was not only forced into the arteries, but also into both portions of the placenta, and was thence returned by the umbilical vein in the ordinary manner.

In the funis of the larger child there were, as usual, two umbilical arteries and one vein, which latter was considerably larger than in proportion to the size of the placenta and membranes which enveloped the larger fœtus.

Near the centre of the cavity which contained the imperfect fœtus, a funis arose from that portion of the placenta, so that there was a funis to each fœtus. This funis of the imper-

[a] Guy's Hospital Reports, vol. i. p. 227.

fect child contained only one umbilical artery and an umbilical vein, which also was of large size.

The imperfect heart-less child was half composed of a large cutaneous pouch, which occupied the space of the head, neck, and part of the thorax; the remaining half consisted of an abdomen, pelvis, and two lower extremities, the feet of which had been separated. The funis entered at the umbilicus, and by its side a hernia appeared, composed, in part, of the small, and, in part, of the large intestines, only partially covered by integuments, and having no peritoneal sac.

But the great peculiarity of the mode of support and circulation of the imperfect fœtus is to be found in the structure of its placenta, and the direct communication which existed between its vessels and those of its perfect twin-brother. A large branch of the umbilical vein of the perfect child passed upon the surface of the placenta, directly to the funis of the imperfect child or monster, and thus a free venous communication was established between the two children, whilst the other branches of the vein ramified upon the surface of each placenta. The umbilical arteries, also, of the perfect fœtus sent forth two large branches, but of unequal size, to the smaller portion of the placenta, as well as many branches to the larger part of it; and the two arteries which passed to the smaller placenta formed only a single umbilical artery in the funis of the imperfect child; so that there was an arterial as well as a venous anastomosis between the two children, and a free communication between them was thus established.

"The difficulty which appears to arise here in explaining how the circulation in the imperfect fœtus could be carried on without the assistance of the heart's action, is at once removed by considering that the imperfect child was a mere appendage to its perfect brother; that there was only one placenta, and the blood which traversed its structure was derived from the perfect fœtus and returned to it again; that the imperfect fœtus received, through its own umbilical artery, from that of the perfect fœtus, the current, which, after entering the aorta, and thence circulating through the arteries and veins of the monster, was conveyed back again, by the umbilical vein of the imperfect, into that of the perfect, fœtus; and that the heart of the well-developed child impelled the blood into the other child, which was appended to it, in the same way, as it caused that fluid to circulate through the vessels of one of its own limbs"[a].

Here, then, existed twins having no union by cohesion of any part of their bodies or members, but yet intimately—in-

[a] *Op. cit.*, p. 236.

deed we may say, vitally—connected by a community or continuity of vascular apparatus in the vessels of the cord, in consequence of which the same current of blood circulated through the systems of both, of which latter fact, my double child presents a most curious instance, but by an arrangement and an apparatus totally different, and, as far as I can discover, unique also.

Double Child, or Adherent Twins.

I am indebted to my friend Dr. Brabazon, of Downpatrick, for this very remarkable specimen of monstrosity by anterior duplicity, connected with which are several points of unusual interest. The drawing (Plate IV. Fig. 1) exhibits accurately their mode of connexion; and as, for the convenience of description, it will be desirable to distinguish the children by names, I propose to call such inseparable friends Pylades and Orestes.

The account of their entrance into life is as follows:—December, 1852. Mrs. ——, aged 42, was mother of six healthy children, never having had twins. Her last confinement was in December, 1846, six years since. In the present instance labour began about 12 o'clock at night, and her medical attendant saw her at 3 o'clock, when nothing particular was observed, the os uteri being but little dilated. Twenty minutes before 6 o'clock the liquor amnii was discharged. At 6 o'clock the presenting head, that of Pylades, began to descend, and soon passed the external parts, with the face turned forwards. Severe pains came on shortly after, with little or no effect, except to cause the expelled head to revolve, so as to bring the occiput under the pubes, and then another head was felt descending. An effort was now made to extract the first child, and failed; but after a few minutes the head of the second child, Orestes, was expelled with very little difficulty. The bodies of both came together immediately after; they showed no sign of animation. The soft parts of the mother sustained not the slightest injury. There was no subsequent hemorrhage, nor any other untoward accident: the mother recovered as favourably as usual, and was quite well in a few days. The placenta presented nothing peculiar, and the umbilical cord was single in its whole length, and in every respect similar to that of an ordinary case; but where it was inserted into the common abdomen there was a small space in which the integuments were deficient, and the intestines covered only by a membranous expansion. This deficiency of the abdominal integuments around the insertion of

Orestes

Pylades

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Fig 2

the cord appears a very constant occurrence in these double monsters. Thus we have already had it noticed in Dr. O'Donovan's case, and it is specially represented in Cruveilhier's plate of his case: it existed also in Sir A. Cooper's monstrous fœtus, before alluded to[a].

The weight of the conjoined children was $9\frac{1}{2}$ pounds. Pylades measured in length 18 inches, and Orestes $17\frac{1}{2}$ inches. The circumference of both heads together was 21 inches, as was also that of the shoulders. The head of Pylades was 13 inches round; that of Orestes, 11. The heads of both were well formed; and, with the exception of a defective finger, there was no imperfection in any of the extremities.

In proceeding to examine them more particularly, I first took a plaster cast of them as they lay, and then had them injected with wax and vermillion, which was most successfully accomplished by Mr. Connor, Curator of the Museum of Trinity College, Dublin, who also subsequently took three casts in wax, exhibiting certain peculiarities in the internal anatomy and arrangement of parts, as viewed anteriorly and posteriorly.

The union between the children was complete from the sternum to the lower part of the abdomen, where the cord was inserted; the sternum of the one formed with that of the other an outline somewhat resembling the letter V; in all other respects the skeletons were single and normal, with this exception, that the anterior extremities of the left ribs of Pylades and the anterior extremities of the right ribs of Orestes were united to a common sternum, as were also the anterior extremities of the right and left ribs of each fœtus at the opposite side.

In the thoracic cavity were two distinct hearts, contained, as in Ritta-Cristina[b], within one pericardial sac, and two pair of lungs normal in character; the thymic glands were unusually small; the diaphragm was perfect, and divided, as usual, the thoracic from the abdominal cavity. The urinary and genital systems were perfect and distinct in each fœtus. There was only a single but large liver, and no gall-bladder could be found; there were two distinct spleens and pancreases, two pairs of kidneys and supra-renal capsules, and two distinct stomachs, each having its own duodenum, which, after passing a short way downwards, united into one common jejunum, which ended in *a capacious pouch*, from which again emerged two separate small intestines, that of Pylades being rather the longer, leading into

[a] See Guy's Hospital Reports, vol. i p. 233. [b] See Serres, Pl. VIII.

the large intestine of each fœtus in the usual way; each fœtus having a distinct and perfect colon, appendix vermiformis, rectum, and anus.

The most curious and important fact connected with this remarkable specimen is, I think, to be found in the manner in which the circulation was carried on: the cord was single, and, as in ordinary cases, contained only one vein and two arteries of the usual size, which three vessels communicated exclusively with Pylades, Orestes having no umbilical vein, nor pervious umbilical arteries.

The umbilical vein, taking its usual course, and having entered the liver, passed directly into the vena cava ascendens of Pylades, having given off three pretty large portal branches, one of which passed into a small supernumerary lobe of the liver; in other respects the venous system was normal, with the remarkable exception that from the vena cava of Pylades a *very large branch* passed off though the substance of the liver entirely across, and ended by discharging itself into the vena cava ascendens of Orestes (see Plate IV. Fig. 2), so that a large portion of the renewed blood, arriving from the placenta by the umbilical vein, was at once transferred from the system of the one fœtus into that of the other. The vena azygos of Orestes was unusually large.

Of the arterial system it may also be said, that it was normal, with one other equally remarkable and corresponding exception as that just noticed in the venous system: it has been already remarked that in Orestes the umbilical arteries were impervious, or, indeed, only rudimentary, but to compensate for this want there was given off from his descending aorta, just above the source of the renal artery, a *very large branch*, which, passing under the liver, crossed over and discharged itself into the descending aorta of Pylades, and thus the used blood of both was returned to the placenta (see Plate IV. Fig. 2) through the instrumentality of an apparatus and arrangement which I believe to be not only very rare, but probably unique.

From this supernumerary large arterial branch, connecting the two aortæ, all the intestines below the duodena derived their vascular supply. There was very little meconium. I do not mean to assert that communication of both the arterial and venous systems is a new fact, as it has been observed in other forms of monstrosity where two bodies, united above, terminate in a common or conjoint pelvis, and there are only two lower extremities. Thus, Serres, in describing Ritta-Cristina, mentions "a large transverse branch, formed by the iliac arteries of each, and uniting the circulation of the

two children (see Plate VIII. and p. 224); and in Plate XIX. are represented anastomoses between both the arterial and venous systems; but I have not been able to find any instance of the double communication, such as I have just described, in the species of monstrosity which led to the writing of these observations. And it adds, I think, not a little to the interest of this matter, that the contrivance here put into operation for carrying on the circulation of Orestes, without his having any direct connexion with the umbilical cord or placenta, is, in addition to its singularity and completeness, rendered the more remarkable from the fact, that the vessels by which the desired end is attained are not usually in existence at all; so that they cannot be looked on as instances of vessels merely in a state of increased development, in order that they may act vicariously for some source of supply accidentally interrupted; nor can they be considered as a modification of some natural arrangement, more commonly recognised under other forms or relations, but as an entirely new apparatus, superadded, with infinite wisdom and obvious design, to effect a special purpose.

The pouch or sacculus also, above described as very capacious measuring about 5 inches by $3\frac{1}{2}$, is a curious part of the intestinal arrangement, and I am inclined to agree in the view of Dr. Parsons with regard to it, for it existed in the same situation, and with the same relations, in his case exactly as in mine; that it is intended "to supply the want of two regular jejuna; for, if these children had lived, each, having its own proper stomach, would probably have eaten a due quantity of food for its sustenance, and the office of the stomach might have been well enough performed, but each requiring a separate system of intestines to dispose naturally of the digested chyle, and this preternatural conjunction happening between them, the jejuna of both were confused together, and having room in the abdomen, these parts of their organizations that ought to have grown into two guts of a considerable length, being hindered from a regular accretion, the joint growing powers of both formed the sac of communication now before you, which is proportionably capacious enough to answer the purposes of two natural jejuna, below which the rest of the intestines of each child were sufficient to do their several offices"[a].

So far as I have been able to discover, Dr. Parsons' case resembles mine in the peculiarities of the vascular arrangements, more closely than any other, but not completely. In his case the cord was single, with one vein and two arteries,

[a] Philosophical Transactions, vol. xlv. p. 529.

both the latter belonging to the larger child, as in my case; but the vein bifurcating within the liver, so as to send a branch into the vena cava of each child; instead of having the additional large venous canal directly connecting the two cases, as in Pylades and Orestes. And again, he expressly describes and figures "an artery which," to use his own words, "arises from the aorta, about the place of the cæliac of the one child, running along before the liver, and is inserted into the same place of the aorta of the other. It was much larger than any other artery in either child, and bestowed branches on the stomach, mesentery, and mesocolon, being about five inches long, for there were neither cæliac nor mesenteric arteries, according to nature, in either child"[a].

It is greatly to be regretted that in so many of these cases no pains have been taken to obtain a knowledge of the internal arrangements and constitution of these anomalous products, or even to ascertain whether the placenta or cord presented any peculiarities; and, as a useful suggestion with regard to the best mode of conducting examinations of these monstrous productions, I think I cannot do better than also quote the words of Dr. Parsons, addressed to the Royal Society in 1748: —"None of these uncommon subjects ought to be touched with a knife until it is well injected, because the vascular system, where there are any preternatural adhesions or distortions, can never be understood or traced without it;" and I would suggest, in addition, that it would be better, in every instance, before injecting[b], to take an accurate cast of the external conformation.

ART. IX.—*Selections from the Unpublished Manuscripts of the late* ABRAHAM COLLES, *Professor of Surgery to the Royal College of Surgeons of Ireland.* Edited by his Son, WILLIAM COLLES, F. R. C. S. I., Surgeon to Steevens' Hospital, &c.

No. 1.—TETANUS.

KNOWING the vast importance of the assistance to be derived from the experience of others, and the great value of facts or cases recorded with care and impartiality, I have often been anxious to make public a selection from the numerous cases which have been collected by my late father, during a long professional career, extending from the time of his appoint-

[a] *Op. cit.* p. 531–2.

[b] *Op. cit.* p. 528.

ment to Steevens' Hospital in 1794, until his death in 1843,—a period of half a century; but when I found that many of these were imperfect and unfinished, and many presenting nothing of novelty, I have as often deferred the labour, having contented myself with the preparation of two papers in former Numbers of this Journal on subjects to which he had specially directed his attention, and the cases referred to in which were more perfect. Still, I do not consider I have done enough to make known the extent of his labours, and I therefore purpose to give, from time to time, a selection of a few cases bearing on a particular surgical disease,—selecting such as are most perfect in themselves,—and record any fact that may suggest a deviation from the generally received opinions, and confirm or oppose the theory or practice at present adopted.

With this view I shall commence with the subject of Tetanus, the cases of which are not so numerous as in other diseases. Some of them, moreover, support, I think, those distinctions of the disease which I ventured to suggest in a paper in the thirteenth volume of this Journal. I must previously state, that I have condensed the details as much as possible, omitting, however, no fact of interest or importance; but where the daily reports present no important point of difference, or the directions for the administration of remedies, which were so much used formerly, might be briefly stated in general terms as to the treatment pursued,—I have used considerable freedom with them.

I have appended a Table of the Cases, by which may be seen at a glance the great differences as to the various periods and causes of the disease, and from which it may also be learned that we can derive no certain, or even probable, rule, either from the severity of the cause of the disease, or from the lapse of time to its invasion, to guide us in forming an opinion as to its probable duration or result.

Case I.—Joseph M'Keon, aged 38, admitted into Steevens' Hospital, September 19th, 1804, with symptoms of trismus. He cannot assign any cause for them; no wound; no unusual exposure to fatigue or cold; nine days ago he felt pain in his back, and could not open his mouth or swallow; three nights before admission he had a severe fit, from the report, resembling a paroxysm of tetanus; paroxysms now are slight and not frequent. He was purged, put in a tepid bath, and ordered a grain of opium every third hour; pulse 80; head bent back; abdomen tense and retracted; motion of his head brings on a paroxysm. He sweated profusely after the bath.

September 20th. He felt himself better, could open his mouth wider. Pulse 108. In the evening the paroxysms were much more violent and painful, and he felt as if there was something in his throat he could not spit up. Sweats profusely; paroxysms more frequent, one every five minutes; sweats with the pain of the start; swallowing worse; left leg became quite stiff. Ordered two drachms of mercurial ointment, to be rubbed in every second hour, and to have the bath.

September 22nd. Slept well, feels better; spasms less severe; drinks with more ease; in the evening spasms became more frequent, not violent or long continued; bowels affected; passes urine with difficulty; gums slightly swelled; mouth affected.

September 23rd. He had some tenesmus; pulse 120; paroxysms very frequent, though slight; very sleepy; there is some delirium; swallows but badly, the drinks being rejected with force.

September 24th. No delirium, complains of hiccough; belly soft; swallows with difficulty; pulse very quick; delirium towards evening. What he calls the rattles in his throat prevented his sleeping.

September 25th. Countenance sunk, covered with sweat.

September 26th. Free from spasms during the day; swallowing very difficult. He died this day.

Case II.—Eaton, a clerk, aged 45, admitted July 10th, 1809. Twelve days ago he felt stiffness in his jaws and back of the neck; three days after, he was admitted, when he could open his mouth so as to admit the middle finger. His face was but slightly indicative of the disease; mouth not retracted or belly tense, nor did he complain of viscid saliva in the fauces. He was put in a warm bath, and ordered a grain of opium every second hour, to be increased to two grains.

July 16th. Symptoms worse. On coming out of the bath he had a general spasm; swallowing much worse, could scarcely get down the pill; he complained of viscid saliva in his throat.

19th. Cannot admit the end of a spoon between his teeth; the angles of his mouth are retracted; abdomen not hard; lower extremities are rigid; great pain in passing urine; no pain from sternum to the back; attempts to swallow bring on a spasm; he sits up in bed. He got an enema, which operated and gave him relief. To continue the opium.

20th. Muscles more relaxed; swallows better.

21st. Perspiration more profuse; jaws more relaxed; feels better in every way, but thinks the spasms of his back are

more frequent; transient delirium during the evening. Pulse 104.

22nd. Very restless last night; delirium; could scarcely be kept in bed; drinks a vast quantity without much distress, but rejects nearly one-third by some convulsive effort of the organs of deglutition. Towards evening his breathing became affected. Spasms much less severe, countenance pale. Pulse 106. Ordered wine; got an enema, which acted well.

23rd. Frequent but slight spasms while dozing or drinking; and discharges viscid saliva from the throat.

24th. Had delirium last night; seems much better this day; can slightly bend his legs, but the effort brings on a spasm.

27th. Nearly the same state until evening, when he was seized with difficulty of breathing, had a general tremulous motion all over, and died.

Case III.—Bryan, aged 32, admitted March 14th, 1809. He has been working hard planting potatoes. On the 8th he felt himself dull, and next day complained of a sore throat; the following day he was admitted. When he attempts to speak a few sentences, his face becomes suddenly distorted, the angles of the mouth drawn backwards, the eyelids drawn so as to half close the eyes; complains of soreness of his throat and difficulty of swallowing; no external swelling; skin hot and dry; pulse 64.

Next day worse; difficulty in swallowing increased; spasmodic distortions of face more frequent; in the intervals countenance nearly natural; no pain at ensiform cartilage; has an increasing desire to yawn, but cannot; can turn his face to the left side, but turning to the right is stopped by pain, which he refers to the os hyoides, and says, when he draws his breath the drink goes down; mouth can only admit the middle finger; is sleepy, but starts out of sleep; feels a thick spittle in his throat which he cannot get up.

15th. Profuse perspiration after a bath; spasms less frequent but not less severe; coughs after drinking; pulse 68.

16th. Can swallow much better; had a profuse perspiration last night.

19th. Free from spasms; jaw could be opened a little more; has profuse perspirations; pulse 34; bowels confined. [No further report.]

Case IV.—John Boy, aged 16, admitted May 4th, 1802. Had lain on the boards for seven nights, when he perceived a stiffness in his jaws; it was not preceded by any affection of the throat or twitching of his limbs; his jaws became gradu-

ally more stiff. Two or three nights after the stiffness began he bit his tongue. Seven days from the commencement of the disease he was admitted into Steevens' Hospital. At different times since admission he had what he calls convulsions, in which he bit his tongue, the dread of which prevents his lying in bed; his abdomen is tense and hard; great thirst; pulse 110. Says the convulsive attacks are not preceded by any pain at the ensiform cartilage. He was ordered a warm bath, a purgative enema, and a grain of opium every second hour. Says he has felt relieved from the bath; passed a better night; is troubled with a cough; bowels free; much thirst; can open his mouth more widely; pulse 128.

May 10th. Says the baths weaken him very much; to continue the opium, and to have wine.

12th. Pulse 84; pain in his back is gone; had a severe fit of sneezing and coughing, and bit his tongue while asleep. [No further report.]

Case V.—Mary Malone, aged 22, admitted September 1st, 1803. Ten days ago, while riding, was thrown from her horse and fell on her elbow; her left leg was also caught in the spikes of a carriage, causing a wound which her efforts to extricate herself increased considerably. On admission, the wound was black and much swollen. Yesterday the sloughs had separated, and the wound looked healthy; discharge slight. Two days ago she felt some uneasiness in swallowing; complains of pain in her back; startings in the limb; no twitching of the muscles of her face; frequent efforts to spit up a viscid saliva; sweats profusely; starts from her sleep in violent pain, and bites her tongue; has no general spasms; pulse 110; bowels costive. Ordered one grain of opium every second hour, to be increased; and a warm bath.

3rd. Sweats profusely; spasms more severe; tetanic expression more marked.

4th. Spasms, principally in the head and neck, almost constant.

9th. Continued increasing in severity and frequency until this day, when she died.

Case VI.—Mary M'Cabe, aged 38, admitted September 4th, 18—. On Sunday week a car passed over her right foot, scraping off the skin. Last Wednesday she complained of stiffness of her jaws, and difficulty in swallowing, and tetanus set in. Thursday, slough cast off from the foot, and an incision was made through the wound, without affording any relief to the symptoms. Ordered opium.

Thursday. Cannot swallow the pills, or even liquids, without great difficulty. Ordered the opium in enemata, and to have a warm bath, which she says weakened her very much. Sweats profusely; convulsions are slight but frequent; she feels as if a rope were pulling her head back; her hands are much contracted.

5th. Respirations slow; very sleepy; constant starting of her hands and feet, more of the injured limb than the other. [No further report of this case.]

Case VII.—Stephen Lalor, aged 12, admitted August 18th, 1802. A car fell on his right leg, and he was brought into hospital. There is a wound about an inch above the ankle, and through this the upper portion of the broken tibia protruded. Extension was made, but the bone could not be adjusted; the limb was laid on the side, and he was bled to twelve ounces; he had some starting in the limb at night.

19th. Was feverish; pulse 112. Again bled and purged.

22nd. Had a good night. A healthy purulent discharge from the wound.

24th. On endeavouring to eat, he felt some stiffness in his jaws, and sudden inability to swallow. He was ordered a grain of opium. After the spasm his face was bedewed with a copious sweat; spasms recur only on his attempting to swallow; pain in the sternum; head retracted; throws up viscid saliva after attempts to drink; belly tense and retracted; hands not affected; wound of leg looks well; no pain in it till an incision was made.

24th. Bowels confined; an enema was administered; pulse full, and so quick as to be with difficulty counted; breathing quick; sweat profuse. Died this evening.

Case VIII.—April 27th, 1806. Hugh Maguire, aged 19. His right hand and arm were caught in a mill, and he was brought to hospital; immoderately talkative; singing; incoherent. His friends refused to allow amputation; the skin was torn all round above the elbow, and drawn down nearly to the wrist; the muscles were bruised, and some torn across; the wound was brought into apposition, and he was bled to twenty ounces; suffered great pain in the arm that night.

29th. Thin discharge from the arm, has a fetid odour; skin livid; abscess found under the skin at the elbow; was let out.

May 11th. Gangrened skin all separated; complains of some stiffness in the jaws; while dozing his tongue was caught between his teeth; no stiffness in neck; pulse 88. Ordered

one grain of opium, to be increased to two grains, every hour. Can swallow fluids better than solids.

15th. Jaws more closed; tongue caught three times yesterday while dozing; countenance altered; angles of mouth drawn back; eyelids contracted like a short-sighted person, wrinkling of the forehead.

17th. Rested better; did not bite his tongue while he kept a cork between his teeth: when this was bit across, his tongue suffered; sweats much about head; abdomen retracted and tense; pain on passing urine; thinks he can open his mouth better.

18th. Vomited; while asleep his legs shook violently; breathing irregular; violent itching of the skin.

21st. Got calomel and jalap, which procured one large stool, soon after, he felt as if going to die; sweats very profusely; complains of phlegm in his throat; slept constantly; marks of tetanus less strong, can open his jaws wider; frequent desire to pass urine; appetite.

25th. Cough very troublesome; pain on dressing wound makes his jaws close, which have become more tight on omitting the opiate.

June 7th. Tetanic symptoms same as previously, with occasional alterations; appetite improved; complains of his chest.

10th. Expectorated a large quantity of purulent-looking mucus; complains of pain in the left side.

12th. Cough worse; expectoration profuse, phlegm does not come with the cough, but he says it must collect in some quantity in his throat, which he discharges by vomiting.

15th. Ordered two pints of wine; back stripped from lying.

21st. Had purging for three days.

28th. Cough very troublesome, throws up a fluid like barley water, which flows in a stream for a second or two after each cough, feels that it weakens him; pulse small, 120.

29th. Fluid expectorated less; breathing much impeded; arm looks healthy; pus of a good consistence.

30th. Pain of side better, but died.

Case IX.—March 22nd, 1806. Maryanne Daly, aged 22. Her foot was so distorted that she was unable in consequence to earn her livelihood; it was amputated below the knee this day; some arteries were tied; one between the tibia and fibula could not be secured, though the parts were dressed upwards to try and seize it. It, however, ceased bleeding on the tourniquet being loosened; she vomited after the operation, but this ceased when the bowels were freed.

April 3rd. Since the operation she complains of pain in the stump at night; none by day; discharge good and free; this day she first felt uneasiness in her jaws, increased by efforts to swallow; sweats a good deal. Ordered opium.

5th. Had some vomiting; got an emetic; mouth now closed; abdomen hard and prominent. Cathartic enema, and continue the opium. She complained of pain in the stump and much starting in it; one ligature remaining was cut away; catamenia appeared. Ordered wine.

8th. Stump started more, applied the tourniquet, which, she thought, relieved it.

9th. Worse; the startings now engage all her body. Wine and porter, and opium.

10th. Has a severe cough; sweats profusely; can move the head; sits up in bed, when dozing her head falls forward on her knees, and she starts with a spasm.

13th. Eyes heavy; stump not so well; pain in scrobiculus cordis; increased difficulty of drinking.

16th. Worse; pulse 120; startings more severe.

20th. Felt she was dying; much mucus in the trachea; became restless; breathing more difficult; was perfectly sensible till 4 o'clock, when she died.

Case X.—John Farrell, aged 15. August ——. Struck the heel of his right foot against a stone; the wound was very small and trifling; four days after, he went to bathe, and in the evening complained of a soreness of his throat; he was admitted two days after. Tetanus strongly marked; paroxysms almost every minute; pulse 150 in the spasms, in the intermissions 96, his head is drawn back during the paroxysms. The wound is on the thick skin of the sole of his heel, not larger than would admit the end of a probe; it afforded a small gluey discharge; a crucial incision was made into it. Ordered one grain of opium, and this to be increased, and to be put in a warm bath; when in the bath the convulsions ceased; he moaned, and seemed so weak that he was taken out of the bath after five minutes, and in five minutes after, he expired, his hands strongly clenched.

Case XI.—John Cody, aged 9. March 30th, 1813. The wheels of a waggon passed over both his legs; the skin was torn from the right, and hangs in flaps behind, leaving the tibia bare on left leg; the integuments were lacerated, and also the tendons are bare and torn; no hemorrhage; at night he became delirious; pulse quick, hard; skin dry.

June 1st. Frequent startings in the limbs; some twitching in the muscles of the face; raved constantly, and made frequent efforts to get out of bed; there is a large and fetid discharge from the wounds.

5th. Spasms still continue; wounded parts of right leg appear black.

7th. Complained of difficulty of opening his mouth.

8th. Much tossing of limbs; spasms more general; head is retracted; muscles of neck and back rigid; lower extremities drawn up; spits a viscid saliva.

9th. Had two severe and general spasms; soon after he died.

Case XII.—James Lawler, aged 36. May 6th, 1814. Four hundred weight fell five or six feet on his hand. Considerable laceration, bones of fingers and hand ground into small pieces; on the next morning he was admitted; hand livid; bones projecting; little pain. A week after the accident, he complains of uneasiness of the throat; any effort to drink induces spasm of pharynx; angles of mouth retracted; forehead corrugated; tetanic countenance; muscles of lower jaw rigid; no spasm or pain in hand or arm; no fever.

13th. The arm was amputated four inches below the elbow; easier since operation; abdominal muscles hard and tense; profuse perspiration.

14th. Tightness of throat returned; some cough; pain from sternum to back; had the paroxysm during the day. [No further report.]

Case XIII.—Thursday, June 30th. A woman was delivered a fortnight before, of her sixth child; this child died on Saturday, 25th; she was exposed to cold on the 26th; that evening she felt tightness of her jaws. She was ordered opium and mercurial ointment.

Friday. Could open her mouth better. Had two or three paroxysms that day, and died.

Case XIV.—Mr. M'Evoy told he me lost a man who had lock-jaw on the forty-second day after the fracture; this he ascribes to the man taking off his bed-clothes.

No.	Name.	Age.	Sex.	Cause.	Interval between Cause and Disease.	Duration of Disease.
1	M'Keon,	38	M.	None, ...	. . . . .	16 days.
2	Eaton, .	45	M.	None, . . .	. . . . .	15 „
3	Bryan, .	32	M.	None, ...	. . . . .	Not stated.
4	Boy, . .	14	M.	Cold, ...	. . . . .	8 days.
5	Malone, .	22	F.	Lacerated wound,	8 days,	11 „
6	M'Cabe, .	35	F.	Ditto, . .	10 „	5 „
7	Lalor, .	12	M.	Fractured leg, .	6 „	1 „
8	Maguire,	19	M.	Lacerated wound,	14 „	30 „
9	Daly, . .	22	F.	Amputation, . .	12 „	17 „
10	Farrell, .	15	M.	Laceration, . .	4 „	3 „
11	Cody, . .	9	M.	Fractured leg, .	1 „	10 „
12	Lalor, .	56	M.	Crushed hand, .	7 „	Not stated.
13	—	. .	F.	Parturition, . .	14 „	2 days.
14	—	. .	. .	Fracture, . . .	42 „	Not stated.

I have selected these cases as presenting great variety in their origin, course, and symptoms; they were all treated on the same plan, viz., opium in large and increasing doses, with the warm bath once or twice a day; two used mercury in addition, and I do not think the result would encourage us to place much reliance on these remedies. The warm bath caused the most profuse perspiration, while it considerably weakened the patients; opium seemed to produce its effects without in the least influencing the disease; one patient died well salivated, the mercury did not produce its action in the second, nor did it seem to influence the disease. Amputation was unavailing once the disease had set in; we also find that the disease may come on after amputation without any previous injury; and that it may follow a clean incised wound. Again, as to the form of tetanus, the proportion of cases of idiopathic to traumatic was much greater than at the present day we would expect to exist. Thus we can draw no rule or even form an opinion from the nature of the injury causing, or the time that has elapsed from the receipt of injury and the commencement of tetanus, as to the probable severity, rapidity, or result of the disease. It appears to me doubtful how far the case of Bryan could be considered as tetanus; the symptoms are not strictly such as we should expect to find in the genuine disease. The case of Cody was evidently a case of that form of the disease I endeavoured to describe in the paper already referred to. How far the case of Daly could be ranked in the same category seems a doubtful point. The case of Maguire is one showing that, although the tetanus may be cured, still the patient may die from an affection of the chest, most likely produced by the disease.

Art. X.—*Notes on the Climate and Diseases of the City of Cork.* By John Popham, A. B., M. B., Physician to the Cork North Infirmary.

The city of Cork lies in an irregular valley, which is open to the east and west, but is confined by hills at the north and south sides. On the west it is connected with the fertile valley of the River Lee, which, rising from the secluded mountain-lake of Gougane Barra, so well known for its romantic scenery, flows in a devious course through a country of unexampled beauty until it reaches the city of Cork, where, receiving a large tidal accession, it is rendered navigable to its mouth for vessels of considerable burden. When the Lee is about a mile west of the city it divides into two channels which gradually diverge, but re-unite again, thereby insulating a considerable tract, upon which the main part of the city is built. This tract is not free from the defects natural to its low position, and being permeated by some small streams from the main branches, inundations occur when the river is swollen by heavy rains and high tides, especially when the latter are driven in by an easterly wind. From this cause the city anciently derived its not very flattering name: Corcagh signifying a morass. Before the marshes were drained, the city was small, occupying chiefly the present north and south suburbs, so that when Dr. Gerard Boate, physician to Cromwell's army, published in 1642 his Natural History of Ireland, he assigns the *town* of Cork but the fifth or sixth place, ranking it with Londonderry, and after Dublin, Galway, Waterford, and Limerick[a]. Since then art has remedied many of these disadvantages, and places within the arms of the river have been rendered eligible sites for streets, some of them, strangely enough, retaining their popular name of Marshes. The smaller inosculating channels have been arched over; the river has been confined by handsome quays to its two divisions, and the main branches have been deepened, so that the tide rises to an elevation varying from sixteen to twenty-one feet at the bridges, thus allowing the large channel steamers to load and unload in the midst of the city. Most of these changes have been effected within the last century.

The excellence of Cork harbour for its security, and the facilities for trade which it affords, have produced slow but certain effects. Still, regarding Smith's estimate, in his History of Cork as correct, namely, that the city trebled itself in the

[a] Boate's History of Ireland, p. 6.

forty years preceding 1749[a], when he wrote his work, and taking his return of 7366 houses in 1732, with a probable population of seven to a family, or 55,769 persons,—the ratio of the progress of Cork in size and population does not seem, according to the last Census, to have been proportionate. If, however, we take up Smith's map of the city, published in 1750, we shall obtain juster notions: the whole aspect of Cork, with the exception of the churches, having become so changed, that without these landmarks it could now be scarcely recognised.

The insular extent embraced by the north and south channels being fully occupied, presents limits rather detrimental to the commercial development of the city. There are no sites, either, for handsome squares, such as are seen in other cities. The rising grounds, therefore, north and south of the river have been availed of for terraces and villas, delightfully open to the sun, and affording many of the advantages of a more genial climate; several of these are occupied by merchants, who convert their shops or warehouses in the flat of the city to purposes of business. That part of the northern hill which is to the west of the city constitutes the delightful locality of Sunday's-well, the Montpellier of Cork as it was called, once so famous for the health and amusements of the citizens, and now covered to the water's brink with seats and gardens. The continuation of this hill below the city, and leading to Glanmire, has also been largely built on, though the houses have not much uniformity, so that, viewed from the river, it looks like a distinct city, and may be justly named New Cork. These picturesque terraces, forming the background to the charming scenery of the Cork river, have added much to its effect, giving the grouping and colouring of art to the graceful outline of nature. The northern hills swell abruptly in some parts from the river, and are fringed to the top with trees, and spotted with villas, some on a scale of almost princely magnificence. The green richness of the plantations in summer, and their mellow tints in autumn, afford views which are unrivalled, and make the fame of the Cork river no idle boast. The road leading to Glanmire skirts the margin of the river for nearly three miles, and forms a most agreeable resort. The river runs due east for this distance, and at Blackrock Castle it bends to a south-east direction, forming the grand expanse of Lough Mahon. Some of the beauty of the river near the city has been sacrificed to utility. It used to spread itself over a large space, looking, when the tide was full, like an exten-

[a] Smith's Cork, vol. i. p. 401.

sive inland lake; but the channel became choked with the alluvial deposit rolled down by the current, and required a large amount of labour and expense to keep it navigable. An embankment was thrown out for the space of a mile, separating the bed of the river from the part covered by the tide; and this ground has been lately reclaimed and set apart for a city park, along which the Passage Railway winds its course.

The *physical features* of the vicinity of Cork require a few observations. A valuable paper has been written by Mr. Weaver on the Geological Relations of the South of Ireland. He observes, that high mountain chains commence in the western borders of Kerry, and extend thence in an eastern direction to the county of Cork, between the Rivers Lee and Blackwater, giving the picturesque appearance which distinguishes the scenery of these rivers. These chains are not so continuous as to present an unbroken range, but send off various lateral elevations, running nearly parallel to them, and intersected by glens. Between the two principal parallel chains, wide and deep valleys lie in a longitudinal direction, and form the channels of streams and rivers. The height of these mountains in Kerry is considerable: that of Gurrane-Tuel, the highest point in Ireland, is 3410 feet above the sea level; but this elevation declines gradually to a few hundred feet. The hills at the north and south of the River Lee form part of these mountain ranges.

The *geological character* varies at different sides of the river. The north side consists of grauwacké and slate; the sandstone is of a deep red and coarse structure; it is in parts very hard and difficult to be worked, but varies from the hardest grit to clayey rubble. In boring the tunnel of the Great Southern and Western Railway, much greater difficulty was experienced in working this than was expected. It was curious, that the very great hardness frequently yielded to the chemical influence of the atmosphere,—some kinds, when long exposed, becoming totally disintegrated. This grauwacké formation extends along Glanmire. An isolated limestone strip, about two miles long, is found at Blarney, containing but few organic remains[a].

The southern hill of the Lee consists of limestone of the transition series, and forms a continuation of a band varying in width from five miles to half a mile. It commences easterly at Youghal Bay, occupies the smaller islands of Cork harbour, then appears at the peninsula of Blackrock, and continues to keep the southern bank of the Lee until its junction with the Bride,

[a] Transactions of the Geological Society of London, Second Series, vol. v.: "On the Geological Relations of the South of Ireland," by Thomas Weaver, Esq., F.R.S.

when it leaves the former river, and, keeping to both sides of the Bride for a short distance, ceases at the left bank, but continues at the right to Castlemore Castle, fifteen miles from Cork. This is flanked by more or less elevated ridges of grauwacké and slaty rocks, with which it interstratifies at their confines. The angle in which the strata are inclined to the horizon approaches at times near the vertical, but is chiefly between 70° and 80°, dipping to the south.

The organic remains of the Cork limestone were mostly determined by the careful scrutiny of the late Mr. Samuel Wright, of Cork, aided by Mr. Sowerby. He derived them from the quarries of Evergreen, close by the city, and Ballinlough, on the south of the Lee. Of Invertebrata there are found—of the crustacea, some undescribed trilobites; of mollusca, cephalopoda, comprising some orthoceratites and nautili; of conchiferæ, various species of productæ and spiriferæ, also some polyparia and crinoidea. Traces of Vertebrata also have been found: casts of the vertebræ of fish were discovered by Miller. In the Blackrock quarries some beautiful specimens of amethyst have been dug up. Wavellite has long been found at Tracton Abbey, a few miles from this city, in sufficient quantity to supply the London mineralogical market; and, during the last year, a very pure silica, fitted for the manufacture of the choicest porcelain, has been discovered at Rostellan, on the eastern side of the harbour.

The difference of the soil at both sides of the river was noticed by Smith. "The north side," he says, "being coarse and hilly, is not so well cultivated as the opposite, which, being a fine limestone soil, affords plentiful crops to the industrious farmer"[a]. The earth of the north side is mostly a yellow, gritty mould, which requires lime. Clay for bricks and potteries is found in abundance near Douglas, two miles from Cork.

In the vicinity of the city, the numerous valleys which lie parallel to the hilly ranges, or cross them, are frequently overflowed, forming large bogs. In the basin of the Lee, to the west of the city, a vast marshy tract exists, extending to the very margin of the city, and in winter, when much rain has fallen, lying submerged for days and even weeks. In very high floods, the Dyke-walk and houses are inundated. Another of these large boggy tracts extends for miles between Blarney and Cork; and at the south side a deep and almost impassable morass, called the Ballyphehane bog, reaches from Evergreen to Douglas, and is crossed by the Bandon Railway, in forming which peculiar engineering difficulties were experienced from the yielding na-

[a] Smith's Cork, vol. i. p. 354.

ture of the soil. Besides these fresh-water marshy tracts, there are others to the east of the city partly saline, being exposed to the tides; to them belongs the ground lately reclaimed from the river. The constant evaporation from these large humid surfaces must keep up a peculiar hygrometric condition of the atmosphere.

Indeed, the city of Cork has obtained a degree of *notoriety for rain* much more than it deserves. A Cork mist, like a Killarney shower, is a common jest with travellers. This charge of perpetual humidity, brought against the climate, may certainly receive some countenance from the miry streets, which strike female tourists with dismay. It is, unfortunately, a question as yet unsettled, though affording scope every year for much civic eloquence, whether it is the duty of the private citizens, or of the public commissioners, to keep our *trottoirs* clean.

On making a careful examination of the registry of the weather, taken at the Royal Cork Institution by Mr. John Humphreys, the Librarian, I find that the average annual fall of rain for twenty-five years, to the end of 1852, as determined by the pluviometer, amounts to 38·096 inches; this high average being caused by the six years from 1846 to 1851, both inclusive, in which it rose to the very large amount of 51·542 inches. For the twelve years ending in 1839, the annual average did not exceed 34·212 inches. The extremes of variation are very great,—from 25·438 inches in the year 1844, to the unprecedented quantity of 60·375 in 1848. The difference of rain, in inches, between the years 1845 and 1846 is very remarkable, there being an increase of twenty inches in the latter, which was the year of the potato blight; the rains in 1845 being 32·783, and in 1846, 52·553 inches. From 1846 it continued to increase to sixty inches in 1848,—a period in the annals of this country terribly distinguished for famine and fever, from which year it has declined to 37·653 in 1852,—affording thus a rational expectation of the return of the seasons to their ordinary average. It is curious, that the end of the year 1852, in which so much rain fell in other places, was not characterized in this part of the country by an amount more than usual, though the number of rainy days was considerable. In the month of May, 1844, we find the least monthly amount, only 0·144; and in December, 1847, the greatest, being 16·171 inches; in January, 1851, 14·561 inches fell. In dividing the annual quantity of rain by the seasons, we find, in the year 1852, for winter (including the months of December, January, and February), 12·832 inches; for spring, 5·413; for summer, 8·030; for autumn, 11·372: the quantity of rain during the

winter season is rarely less than one-third of the whole annual amount, and usually exceeds it; the least quantity is in the spring.

In calculating the fall of rain in Cork, I wish to state, that the Royal Cork Institution, where it was estimated, lies on the borders of the river, in the flat of the city, and the rain-gauge is kept at a height of about twenty feet above the sea-level. Recent observations have elicited the curious fact, that nothing is more variable than the quantity of rain falling in places near each other in horizontal distance, but of different degrees of elevation, local causes exercising a considerable influence. This variation was found by Colonel Portlock to exist in Cork. In an interesting paper, read before the Cuvierian Society, the quantities noted at the Cork Institution and the barracks, in the year 1848, were respectively 48·613, and 33·410 inches,—thus making the amount which fell in the flat of the city one-third greater than at the barracks, which are built at a considerable elevation above the city, but less than half a mile in horizontal distance. "The elevation of the barracks places them," he observes, "in a drier stratum of air, and the form of the hill on which they stand allows air charged with moisture to spread easily and descend." Whether this reasoning be founded on correct principles, I cannot say, but it is curious that a conclusion opposite to it is arrived at by Mr. Miller, who gives, in a paper printed in the Philosophical Transactions for 1849, the results of his interesting experiments on the fall of rain at various heights in the lake district of Cumberland and Westmoreland. His theory is, that the degree of humidity increases with the elevation, arriving at its maximum at about 2000 feet above the level of the sea[a].

The number of rainy days in Cork is not so great as might be anticipated from the annual amount of rain. In the register kept at the Cork Institution, the fall of the one-fiftieth part of an inch is considered to constitute a rainy day. Of these the number during twelve years, from 1841 to the end of 1852, gives the yearly average of 134, which is less than in many other localities. The extremes are indeed very distant, varying from 96, in 1843, to 172, in 1848, the latter number being in correspondence with the large amount of over 60 inches which fell in that year. Distributed among the seasons, the average of the twelve years gives for winter, 39 days; for spring, 30; for summer, 29; for autumn, 36. The maximum monthly number of wet days was 25, in January, 1851; the minimum,

[a] Philosophical Transactions, vol. cxxxix. p. 73.

one day in May, 1844. The month of January afforded the greatest average number of rainy days, the mean of twelve years being fifteen days: the months of June and July gave the minimum of about nine days. The months of October, November, and December of 1852, and January of this year, have been unprecedented for the number of rainy days, which amounted to 80 in the four months. But though the mean number of rainy days is comparatively small, the amount of variable weather is considerable, there being an average of seventy days in which showers, mists, or fogs occur, but not yielding an amount of water appreciable by the rain-gauge. Snow is rarely seen more frequently than three or four times a year; in the month of February of this year, when Dublin was visited by such heavy falls, Cork had it very lightly. Frost occurs about twenty-four times in the course of the year. The average of seven years, from 1846 to 1852 inclusive, gave but twenty-four nights in which the self-registering thermometer descended to 32°, or below it. In the order of the years, the numbers were, 34, for 1846; 29, for 1847; 39, for 1848; 14, for 1849; 24, for 1850; 19, for 1851; and 10 for 1852. Hail rarely falls more frequently than five or six times in the year; on May 9, 1851, hailstones fell equal in diameter to the $\frac{7}{16}$th of an inch; but this storm was general in Ireland, having done great mischief in Dublin. Thunder and lightning sometimes happen but once, seldom more frequently than four times in the year. Meteoric phenomena are very unusual; a note in the registry on September 4, 1851, states, that a funnel-shaped cloud, like a water-spout, approached at 12 o'clock at noon very near the ground, rain following two hours after. We possess little information of any exactness upon the state of the climate before our own time. In Dr. Rogers' Essay on the Epidemic Diseases of the City of Cork, published in 1734, we find some Tables of the weather, but too loosely noted to be much depended on. For twelve months, from 1st May, 1721, to 30th April, 1722, his observations were the following:—Rain, 80 days; mist and showery, 119; fair, 139; snow, 4; hail, 3; days not given, 20[a].

The *variability of the atmosphere in density* is such as may be expected in so changeable a climate. The results of the barometric tables for the seven years between 1st January, 1845, and 31st December, 1851, are the following:—The highest point of elevation which the barometer reached in that period was on February 11, 1849, when it rose to 30° 88′; the lowest point of depression for the same period was on

[a] Essay on the Epidemic Diseases of Cork, by J. Rogers, M. D.

January 15, 1851, when the mercury fell to 28° 61′; thus giving for the seven years an absolute range of 2° 27′. The mean of the absolute maximums of *each* of the seven years was, 30° 60′; the mean of their absolute minimums was 28° 71′, yielding thus a mean absolute range of 1° 89′, and differing by 38′ from the total absolute. The mean of the highest monthly pressure for seven years was, 30·37°, the mean of the lowest, 29·27°; the mean annual pressure, 29·85°. The monthly range for seven years gave for January an interval of 1° 33′ between its highest and lowest points; for February, 1·17°; March, 1·33°; April, 1·13°; May, 1·07°; June, 0·94°; July, 0·86°; August, 0·81°; September, 1·18°; October, 1·24°; November, 1·43°; December, 1·41°. We find thus, that the months of November and December afford the greatest range, while those of July and August afford the least. The mean of the whole is 1·16°. The time when the pressure was greatest occurred in the autumn and winter months, and the times of least pressure at variable periods in the same seasons, the extremes approximating in spring and summer.

The comparative frequency of particular winds is an important element in climatic descriptions, especially in their bearing on health and disease. In examining the registry, the great preponderance of the westerly winds over the easterly is remarkable. I have computed the duration of each wind for nine years,—viz. from 1844 to 1852, both inclusive, and have found that the average annual constancy of each at a given period of the day was the following, taken in order of frequency:—The north-west, the most constant, blew for 75 days; the west, for 72; south-west, 63; south-east, 37; north, 32; east, 30; north-east, 28; south, 27. As to the prevailing wind of each month it is very variable. In the months of January and February, the north-west, west, and south-west, contend for predominance, the former more frequently recurring than the others. In March it sometimes happens that the north-west blows for a continuance, but it is varied by a run of easterly and north-easterly gales, these occasionally, but not always, being the prevailing winds. In April the north-west blows for about seven days, the east and south-east sometimes taking the lead, and more rarely the westerly. In May the south-west prevails, but in some years, biting easterly gales occur. In June and July the south-west and west are the chief, the latter blowing about eight days. In August we again meet the north-west, diversified with the west and south-west. In September the easterly breezes again make their appearance, the three points of east, north-east, and south-east,

often occupying more than half the month. In October the prevalence is disputed by the easterly points and the north-west, but the latter is the more usual. In November the westerly winds blow frequently, but sometimes in this month, and in December, northerly winds blow for several days in succession; the north-west is usually the chief. The south-wind is the least frequent of all our winds, seldom blowing in any month more than four or five times, and preferring, contrary to what is popularly supposed, the colder to the warmer seasons.

The *mean annual temperature* of Cork for the three last years amounts to 51·5°; distributed among the seasons, we have for winter a mean of 42·4°; for spring, 50·6°; for summer, 62·3°, and for autumn, 50·5°. The mean temperature of each month is as follows:—January, 40·2°; February, 44·3°; March, 46·3°; April, 51·3°; May, 55·3°; June, 61·3°; July, 63·8°; August, 62°; September, 58·6°; October, 50·2°; November, 43°; December, 42·8°. The difference of the mean temperature of the winter and summer seasons is 19·9°, and of January and July, the coldest and warmest month, is 23·6°. The difference of the mean temperature of the successive seasons is, of winter and spring, 8·2°; of spring and summer, 11·7°; of summer and autumn, 11·8°; and of autumn and winter, 8·1°; showing that the transition from the extremes of temperature is gradual and not sudden. This is still further shown by the difference of the mean temperature of the successive months. Thus, between January and February we have a difference of 4·1°; between February and March, of 2°; March and April, 5°; April and May, 5°; May and June, 6°; June and July, 2·5°; July and August, 1·8°; August and September, 3·4°; September and October, 8·4°; October and November, 7·2°; November and December, 0·2°. Here the maximum differences are at the period of transition of spring to summer, and the months of autumn. The mean monthly range for three years gives us 27° as the interval in January, between the maximum and minimum temperatures of 53° and 26°; in February, 21°, between the extremes of 55° and 34°; in March, 21°, between 57° and 36°; in April, 28°, between 64° and 38°; May, 31°, between 71° and 40°; June, 26°, between 75° and 49°; July, 28°, between 78° and 50°; August, 26°, between 76° and 48°; September, 24°, between 72° and 48°; October, 28°, between 64° and 36°; November, 22°, between 59° and 37°; December, 27°, between 56° and 29°.

The absolute range of the thermometer must be greater in proportion to the length of the period examined up to certain

limits, but, estimating it during seven years, we can fairly conclude that we have very nearly reached the highest and lowest extremes which the mercury undergoes in this part of Ireland. The extremes, as given by the self-registering thermometer, were, for the highest degree, 84° on 14th June, 1846, and the lowest, 20° on 17th January, 1850; thus giving an absolute range of 64°. This range does not, however, occur in any one year. For instance, in the year 1850, with its lowest extreme of 20°, the absolute range was 59°; in 1851, the range was 54°; and in 1852, it was 53°. Thus it would not give an accurate estimate of this subject to judge by so small a period as three years.

The daily range of temperature in the several months, for the twenty-four hours, gives for January the maximum variation of 21°, and the minimum of 7°; for February, 19° and 4°; for March, 20° and 5°; for April, 26° and 7°; May, 27° and 12°; June, 22° and 11°; July, 23° and 8°; August, 20° and 10°; September, 22° and 8°; October, 19° and 6°; November, 23° and 6°; and December, 18° and 6°.

The general appearance of a country is to be received as evidence of its climate, and the effects of the open air on *vegetation*, especially on that of the less hardy species of plants, allow us to form probable conclusions as to its influence on animal life and comfort. The aspect of our fields and gardens testifies amply to the mildness of the climate of the south of Ireland. If our fields are less luxuriant in summer than in less equable climates, they are in winter clothed with a perpetual green. The myrtle thrives in the open air with us almost as freely as in Portugal; though we are told by Meyen[a], "that it perishes when so exposed in Berlin," which is nearly in the same latitude as Cork. The moisture of our climate, and the constant presence of clouds, prevent the atmosphere from being so much heated in the day, and cooled in the night, as in the drier and more transparent air of inland countries, thus affording a more equable temperature. It must, however, be remembered, that the physiognomy of a country depends not merely on conditions of climate, such as winds, heat, moisture, and the like, but on artificial culture; and the higher degree of cultivation usual in the neighbourhood of larger cities, if not allowed for, might mislead us. We have surer data to proceed on in the bloom of our gardens, and the number and nature of our indigenous plants. It is rare, indeed, to find a winter so severe with us as not to pro-

[a] Geography of Plants, by F. J. Meyen, M. D., Professor of Botany in the University of Berlin. Ray Society, p. 13.

vide a bouquet for the florist; and one of our local celebrities[a] presented the Cork Cuvierian Society with a December wreath of forty-seven flowers, culled from his parterre, grown, with little protection, in the open air, and many of them regarded as tender plants in the parts of Ireland north of Munster. With respect to our indigenous botany, I refer, with much pleasure, to the Flora of Cork, published by Dr. Power[b]. According to his catalogue, the number of plants in the county of Cork amounts to 1820; of which 885 are phænogamic, and 935 cryptogamic. This list has been much extended since its publication in 1845, and patient research would doubtless extend it still more. It is still below the number found in higher latitudes, Denmark having 1034 phænogamous, and 2300 cryptogamic plants[c]. The great majority of our plants are to be found in a radius of a few miles from this city. The Nymphæa adorns the still waters of the far-famed Blarney lake, with its spreading leaves and beautiful white flowers just rising above the level of the water. The *Pinguicola grandiflora* is found near the city. The *Trichomanes speciosum*, the elegant Bristle fern, has been met along the Lee, that classic ground of the botanist. Among the "plantæ rariores" may be mentioned, the *Medicago maculata*, *Trifolium arvense*, *Dianthus deltoides*, &c.; but it would occupy us too much to give any further illustrations.

Any thorough inquiry into the *sanitary state* of Cork should embrace a number of considerations. We must premise that this city was formerly the great depôt of the navy provision trade, and though something is still done in this line, the adversity with which the whole country has been overwhelmed, and the many rivals which free trade has encouraged, have rendered it no longer her staple export. In the north outlets of the city were situated the abattoirs, and the ill consequences to health resulting from these slaughter-houses have been often deprecated. The lanes and alleys along the old Blarney road were and are still the depositories of the offal in every stage of putrefaction, and the hand of reform is yet unraised to abate this Augean nuisance. Hence, though this suburb is delightfully situated for health and enjoyment, it is disgraced by every species of contamination; and whatever progress the rest of the city may have made, this portion continues—as it was described by Dr. Rogers in 1720—uncleansed, and by conse-

[a] Botanical Illustrations of Climate, a paper read before the Cork Cuvierian Society, by Alderman Dowden.

[b] Fauna and Flora of the County of Cork, by Drs. Harvey and Power, and Mr. John Humphreys.

[c] Meyen, p. 3.

quence unhealthy. In every epidemic we find it severely visited, and in the late fatal epidemic fever it supplied the hospitals with most of their patients.

Another impediment to the progress of sanitary measures arises from the influx of peasants from the rural districts resorting to the city for relief, or for emigration. The latter class of persons coming to Cork for embarkation, and having little surplus money, flock into the cheap lodging-houses, already centres of contagious disease, and thus spread the evil. No limit can satisfy the cupidity of the owners of these miserable abodes; some of them are cellars, with no possible ventilation, while in others, more favourably circumstanced, the crowding together of numbers in a space vastly disproportioned produces like dangerous effects to health. Hence these houses have been long notorious as dens of moral and physical disease, and the public voice has often called, but with little effect, for a remedy. Whether the new Lodging-house Act will meet the evil remains to be proved.

Another cause, promoting an insalubrious state of the city, is found in the intra-urban interments. The graveyards of the churches are of very limited space, and, being nearly all situated in the centre of poor and populous parts of the city, they cannot but exercise an injurious influence. One of the chief medical establishments of the city, the North Infirmary, is built on the skirts of a graveyard, and, independently of the depressing effects naturally arising from the associations of such a place in the imaginations of the sick, a still greater evil arises from the malarious influence resulting from the continual dredging up the unctuous soil for fresh interments. This was found so great a nuisance during the late fever epidemic, that the General Board of Health had to command the graveyard to be closed against new burials. It is to be regretted that the vested rights of individuals, and the want, though urgent, of a suitable cemetery without the city, prevent the redress of this grievance.

In one essential article of health, *good water*, a great advance has been made of late years. The waters of the Lee, brackish from the tide, were formerly in use among the poor, and caused various abdominal diseases. Public fountains have been lately constructed in all the populous districts, affording a sufficient supply. The water used by the more affluent citizens is particularly free from impurity. An analysis of the pipe-water made by Professor Davy, of the Royal Dublin Society, yielded only 7·20 grains of solid matter in the imperial gallon, being in the proportion of $\frac{1}{9743}$ to the whole, chiefly

consisting of the carbonates of lime and iron, but in quantity so small as not to interfere with common use. When we compare this amount with the quantity of solid matter in the water supplied to London, the purest of which contains $13\frac{1}{2}$ grains, or double the amount, we have reason to be content with our local superiority in this important auxiliary to health.

Before speaking of the *endemic diseases* of Cork, we may say a few words on the epidemics which have, from time to time, visited the city. A general history of epidemics is still a desideratum in medical literature; but the recent establishment of the Epidemiological Society of London promises to do much in this wide field. It is probable that, in the writings of the old annalists, such contagious maladies as were rapid and deadly in their effects were called "plagues," otherwise we must suppose our western isles to be more frequently visited by oriental pestilences than is at all probable. The earliest of these epochs is the year 548[a], when we are told that "Munster was afflicted with a great plague." Whether this was the terrible pestilence which depopulated the earth in the reign of Justinian, A. D. 542, lasting for fifty-two years, and so graphically described by Gibbon[b], we cannot say. The years 664 and 685 witnessed also fatal plagues. Recurrences of these pestilences are chronicled as occurring in 1348, 1361, 1370, and 1383. These dates correspond with the four great epidemics of the "Black Death," that terrible pestilence of the fourteenth century, which desolated the known world. "Ireland," says Hecker, "was much less heavily visited than England"[c]. The next epidemic pestilence noticed in our annals occurred in 1504, but whether this was the petechial fever which then, for the first time, began to attract notice in Spain and Italy, it is difficult to say. In 1528 we find it recorded that "a malignant disease, called the sweating sickness, raged in Cork"[d]. We may take the opportunity here of correcting an error into which Hecker falls, in stating that this hidrotic disease "did not extend westward to Ireland"[e]. In the British Isles, he observes, neither Irish nor Scotch suffered; and he endeavours to explain it by some peculiarity in the English constitution, or "their gluttony and rude mode of life"[f]! He concludes hastily that historians are silent about the extension of so calamitous an event to Ireland.

[a] Bede, Hist. Eccles., lib. ii. cap. xxvii.
[b] Decline and Fall of the Roman Empire, chap. xliii.
[c] Hecker's Epidemics of the Middle Ages. Sydenham Society Ed., p. 27.
[d] Vide Smith's Cork, vol. ii. p. 35.
[e] Hecker's Epidemics of the Middle Ages. Sydenham Society Ed., p. 247.
[f] Ibid. page 294.

In the years 1535, 1547, and 1607, dreadful visitations of pestilences are recorded, of the nature of which we can form no idea. In 1650 plague is again noted, probably the epidemic dysentery, so fatal during Cromwell's visit to Ireland. From this to 1708 we have no account of any epidemic; but the last date, and that of 1718, are assigned by Dr. Rogers, in his work on the Diseases of Cork, as remarkable for typhus fever and malignant dysentery. The same author cites 1731 as a fatal year from small-pox, and 1740–41 from fever and dysentery. The years 1762 and 1782 were notable for a wide-spread and fatal epidemic of influenza. The last year of the past century was a famine year, and the present century opened disastrously with famine, and its not uncommon sequela, typhus fever. Over 4000 persons, writes Dr. Milner Barry[a], were attacked in Cork, of the poor; so that, in 1802, it was judged necessary to open a district fever hospital in the city.

In 1803 another very severe outbreak of influenza occurred, and in 1810 contagious fever became again general; great destitution existing among the poor. This returned, in 1814, in a mitigated form; but a scanty harvest occurring in 1816, typhus broke out the following year, and over 8000 cases of it were met with in Cork and its vicinity[b]. This epidemic prevailed all over Ireland, and also in Great Britain; and in 1818, a Bill passed the Legislature to establish Fever Hospitals in Ireland. In 1822 and 1826 a return of fever took place in Cork, as well as other parts of Ireland, and has been described by the able pen of Dr. Graves[c]. In 1832 a new pestilence visited us in the form of that fearful epidemic, the Asiatic cholera, in its slow but certain progress through the world. In 1837, one of the most fatal and universal epidemics of influenza within our memories, occurred, followed the next year by an outburst of fever. In 1841 and 1842 a violent epizootic swept off thousands of cattle; and in 1846 and 1847 occurred that fatal period in our history, when, to the miseries of want and despair, from the failure of the potato crop, were added the ravages of a widely diffused and mortal epidemic of typhus fever. In March, 1849, we were again visited by the cholera, but since this period our country shows some sign of recovery from her almost exhausted vitality, and general health and public prosperity seem settling on a more stable foundation.

[a] Report of Cork Fever Hospital, in the Edinburgh Medical and Surgical Journal, vol. xiv. p. 117.

[b] Practical Observations on Typhus Fever, by A. Callanan, M.D.

[c] See his Clinical Lectures, edited by Neligan, vol. i. Lecture vii. The Irish School of Medicine has, alas! to deplore the recent loss of this accomplished physician, one of its brightest luminaries. "Quando ullum inveniet parem?"

Such is a succinct account of the chief epidemics occurring in the city of Cork from the earliest record to the present time; and there are few countries in the world where these terrible national scourges commit such havoc as in ours, from the improvident recklessness of the people. The celebrated historian, Niebuhr, has alluded, with his usual acumen, to the singular influence which fatal epidemics exercise over the character of nations, whole periods of history being explained by their appearance or disappearance. All great epochs of moral degradation are connected, according to him, with great epidemics. In the succeeding generation everything perishes, and barbarism returns. His observations have much truth, for when men get reckless of life they care little for the means of preserving it; and when, on the other hand, the fear of death absorbs all the thoughts, the framework of society is broken. To trace the effects of these epidemics in our own countrymen would afford a painful interest. Ireland, in the late epidemic, seemed like some "city of the plague" in the middle ages,—terror was in every breast, the dark robe of mourning was seen in every family, and country districts, once populous, now appalled the heart by their loneliness. Hordes of human beings, enfeebled by sickness and attenuated by want, rushed into cities for an asylum, meeting their fate with a resignation like the apathy of despair.

Of *endemic diseases* we may begin with fever, as always lurking in this city, liable to be drawn out on any violation of the laws regulating health. It would almost appear that the Irish constitution has a greater affinity for fever than that of other nations, as no sanitary measures can wholly extinguish this disease, which smoulders on until some spark kindles it into a flame. It follows the Irish labourer even to other countries, and Glasgow and Liverpool trace their fevers to the quarters of the Irish, and cast on them the stigma of originating the disease. It must be admitted that most of the stimuli which quicken the seeds of fever exist among the lower classes of Irish,—deficient and bad food, intemperate habits, neglect of personal cleanliness, and *the effluvia accumulated from numbers herding together, like gregarious animals, in ill-ventilated dwellings.* These hurtful habits the Irishman does not leave behind him when he emigrates. The evil effects of over-crowding were fatally evident from the pressure on the different workhouses during the famine, showing that, of all the auxiliaries to health, pure air is that which can be least neglected with impunity. It is to be feared that, unless due precautions be taken, the practice which prevails in this city and elsewhere, of congre-

gating hundreds of young females in industrial establishments, where confined space and a not healthy occupation, are combined, will lead to evils which are likely to lessen the utility of these institutions.

Among diseases which appear to travel in cycles, *intermittent fever* may be included. It was, as might be expected from the marshy nature of the district about Cork, at one time one of our most common affections, and "the fever and ague" were as familiar words in this city as in the swamps of the Mississipi. It is curious that, without any obvious cause, this disease, for a number of years, totally disappeared among us, so that during my connexion with the North Infirmary, as physician, the only instances I witnessed, for more than ten years, occurred among sailors coming to this port in corn vessels from Galatz, and other places along the Danube; and some of our medical pupils passed their noviciate without witnessing a case of the disease. The first indications of its return were seen in March, 1850; but the persons attacked were from particular localities. It continued till July and August, when it disappeared until the March of the following year. Males were much more frequently affected than females. No age escaped, from the infant at the breast to the threescore and ten, but chiefly it seized on persons in the prime of life Some of the cases came from the high and dry grounds and the sandstone formations, such as the Fair Hill, others from the humid soil and limestone of Evergreen and Blackrock.

Many of the lanes in the suburbs had it, and persons residing along the river quays did not escape, though it was capricious in its selections. In the Cork Union Workhouse, situated near a bog, a number of cases occurred, and the districts of Killeen, Whitechurch, and Ballincollig, were largely attacked. The type was chiefly tertian; some cases of quotidian were met; quartan was rare. It was very amenable to quina; but, unless the remedy was long continued, the disease relapsed.

Another disease, once frequent in Cork, then disappearing almost totally, and lately returning with great severity, is *dysentery*. In our annals dysentery held the second place for fatality among the "*leaguer sicknesses*" of Ireland. In 1796 it committed great ravages in the ranks of the Irish Brigade quartered in Cork; it was an autumnal disease, and followed generally in the wake of fever. It continued for a few years after; but the next account of it, as an epidemic, is to be found in Dr. Cheyne's valuable paper in the Dublin Hospital Reports[a].

[a] Dublin Hospital Reports, vol. iii., p. 11.

According to the late Dr. Milner Barry, of this city, it occurred among the poor chiefly after a wet summer, and carried off one in every three attacked. It was supposed by Dr. Barry to have been caused by bad water; and he states that in the old Cork Barracks the troops had been supplied with brackish water from the Lee, and were attacked with dysentery, but Surgeon Bell had a supply of pure spring water brought to the Barracks, which caused the disease to disappear. The decline of dysentery in Cork was, perhaps, too hastily concluded by Dr. Barry to be due to the erection of public fountains, and a better supply of good water. It certainly so far declined, that for a number of years it had scarcely an existence in the city. In a statistical report of the diseases admitted into the North Infirmary, during five years from 1838 to 1843, which I drew up for the Medical Section of the British Association, at its Cork meeting, I found that but seven cases of this disease had been received into the hospital[a]. But the potato failure, in 1846 and 1847, brought back the disease in all its virulence, and in a highly contagious form, being united with continued fever. Since the cessation of the epidemic, dysentery has remained in this city as an endemic, though, as we have seen, the want of good water is no longer a cause. The dietary of workhouses has certainly a tendency to promote the disease, and it is one of the chief causes of death in these institutions, chiefly among the very young, and the aged and infirm. Of 1101 deaths which occurred in the Cork Union Workhouse, from February, 1852, to February, 1853, 131, or one-ninth, were caused by dysentery, besides those cases where it complicated and hastened the issue of other diseases. But it would be wrong to conclude, that all these persons were first attacked while in the workhouse; a great number were brought in from the electoral districts in a hopeless state. The change of diet has been too sudden and too absolute for the poor; they do not understand the mode of preparing the Indian meal for food, and have not the means of cooking it properly. Besides, they are obliged to use an article of inferior quality.

Another disease resuscitated after the potato failure was *scurvy*. This disease of higher latitudes had become almost unknown until the year 1847; the only cases in our hospitals being of sea scurvy among sailors, chiefly of guano vessels, the continued exposure to the vapour of ammonia in these ships appearing to act as a determining cause. We could assign no obvious cause for the epidemic of land scurvy; in some the

[a] Report of the British Association for the Advancement of Science, for 1843, p. 84.

excessive use of tea or coffee was assigned by them, but this is no rare abuse. It prevailed very much in the workhouse, and attacked females more than males,—individuals, moreover, frequently in the prime of life and strength. The gums were generally first affected, and then stiffness of the joints came on, and pains of the legs, and the symptoms declined in the same order. This disease has been so well described by the late Dr. Curran, in this Journal[a], that I have nothing to add to his observations. The epidemic passed away as suddenly as it came, and has not since returned.

Diseases of the chest hold a prominent place in our catalogue, as they do in other parts of Ireland. Of these, bronchitis senilis and phthisis are the most important. The results of hospital experience afford ample proof that the latter of these diseases is not constant in its prevalence, but of an intercurrent character, long periods sometimes occurring which are comparatively free from it. Our cases of very acute phthisis are rare, the disease seeming very much prolonged with us, especially among the higher classes, who can guard against undue exposure to weather. Of the 1101 deaths from all diseases in the workhouse, during the past year, 57 were from consumption.

The *diseases peculiar to workhouses* would form an interesting inquiry. In every epidemic the first cases usually occur there, so that the physicians of these institutions can see before others the coming storm. Some diseases may be called indigenous,—such is that fruitful cause of death which is called in workhouses the *house-decline*,—a kind of cachexia nosocomiensis,—in which the patient, chiefly a child, droops day by day, with no pain, no expression of regret or repining, and but little evident disease. Another of these diseases is *purulent ophthalmia*, which commits terrible havoc among all ages, but chiefly the young, running its course with great rapidity. It is a disease of the end of spring and the summer, and seems more closely connected with foul air in heated wards than with other causes, —ablutions with impure water also help to produce it. In some cases it could be traced to lime rubbed to the eyes, or the juice of the *euphorbia helioscopia* dropped into them, by children who did not wish to be sent to an auxiliary workhouse away from their mothers.

Of *diseases rarely met with* in Cork may be mentioned calculus of the urinary bladder. Very few cases of this disease present themselves at the hospitals, though the operations which have taken place have been very successful. Bronchocele

[a] Dublin Quarterly Journal, N. S, vol. iv. p. 83.

is another unfrequent disease, considering the marshy nature of the country. Colica pictorum is a disease almost unknown. I recollect of but one case of wrist-drop from this cause. Delirium tremens has declined with us of late years, though the enthusiasm of the advocates of total abstinence has abated. It has been observed, that when temperance societies are in full operation outbreaks of this disease are met, which are unusual at ordinary times. The drunkard then throws off all shame, and drinks deep rather than taste not. The chief advantage of these societies seems to be, that they have struck at that monstrous evil which prevailed formerly among all classes of society in Ireland, which made drinking to excess a popular and venial indulgence. It is a remarkable trait of the Irish character that, under the late pressing evils of destitution and sickness, *suicide* has been so rare. The unhappy outcast has lain down in the streets or fields to die, perfectly resigned to his fate, but never seeking to hasten it. The sense of injury, much more than the feeling of privation, hurries on the Irish peasant to commit crimes; and to take away the life of another is but a light matter compared with the act of shortening his own. They have truly little thought for the morrow; hope is rarely extinct, and their agricultural habits and feelings of religion keep them from yielding to sudden acts of despair.

I have to say, in conclusion, that in reviewing this paper I am sensible of many omissions and defects which I cannot now rectify. I have in the Tables followed the mode adopted by Sir James Clarke, in his excellent work on Climate. I have endeavoured to do, upon a small scale, for the city of Cork, what Dr. Scott has so ably done for Queenstown[a]. The results only of long and troublesome Tables have been given, as the calculations would be tiresome. Their accuracy, however, can be depended on. Any person who has made similar calculations well knows the exhausting trouble attendant on them, and will, I feel certain, make allowance for many deficiencies.

Art. XI.—*On Prolapsus of the Uterus and Vagina during Pregnancy and Labour*[b]. By J. H. Houghton, M. R. C. S. E., Surgeon to the Dispensary, Dudley.

It will be conceded that, as a general rule, "extraordinary cases are usually more curious and interesting than in-

[a] Dublin Journal of Medical Science, O. S., vol. xiii., p. 55.

[b] Read before the Birmingham Medico-Chirurgical Society, March 1st, 1853.

structive and important, and therefore, while it may be an agreeable occupation to relate the former, it becomes an imperative duty to record the latter; amongst which I think the following case of prolapsus of the uterus and vagina, with extreme rigidity of the os uteri during the whole of pregnancy and labour, may justly be classed. So few cases have been recorded, and fortunately so few happen, that, considering the dangers and difficulties we have to encounter when they do occur, any information on the subject must be considered important.

Mrs. S.[a], aged about 26, was taken in labour with her second child, on the 13th November, 1851, at 4 P. M. The pains continued feeble and infrequent till 2 P. M. on the following day, and I saw her at about 4. The head presented naturally; the os uteri was dilated to the size of a crown-piece; the passages were moist; and the membranes had been ruptured about twenty-four hours previously. However, on examining more carefully, I found that the os uteri was close to the outlet; that the walls of the uterus, from the margin of the os to that part of the uterus against which the head of the child pressed, formed a cone about three inches long, the apex downwards, as though the neck of the uterus had dilated simultaneously instead of becoming obliterated before the dilatation of the os commenced. The lips of the os were exceedingly thick, rigid, and unyielding, and indeed the whole of the cone above described presented the same unyielding character. The pains were regular and tolerably strong. As the labour proceeded, the whole mass, uterus and head, came down together, dragging with it the anterior wall of the vagina, and at length obliterating the anterior *cul de sac* of the vagina; and the considerable tumour thus formed dilated the vulva. The descent continuing, and the dilatation of the os uteri hardly progressing at all, the uterus came so low down that the anterior lip of the os uteri was pushed outside the vulva, and the anterior half of the os uteri, and the posterior half of the vaginal orifice together, formed an elliptical opening, through which the head of the child could be readily felt, and if necessary could have been seen. Still the os uteri continued firm, hard, and unyielding, and eventually the whole of the os, with an extraordinary caput succedaneum, protruded from the vagina. Still the rigidity continued, and I began to lose all hope of the dilatation being effected by natural means.

The above is a pretty fair account of what took place until

[a] Mrs. S.'s mother is the subject of prolapsus, which came on only after the birth of her last (ninth) child.

about 8 o'clock P. M., and then things were much in the state described. The patient being a pale, delicate, little woman, venesection was not performed, but tartar emetic, in nauseating doses, was given, and nausea was kept up for about three hours. After this, two scruples of laudanum were administered.

At this time the condition of the patient was much as follows:—Os uteri rather larger than a five-shilling piece; caput succedaneum protruding through the os; bones of the head pressing on the margin of the os, which was thick, hard, and very unyielding. Pains strong. Anterior *cul de sac* of vagina obliterated with each pain, and a disposition for the whole os uteri to pass externally at every pain. For sometime after the laudanum was given the pains became more moderate, but they never ceased, and at about 10 o'clock they returned sharply; the os, if anything, showing more disposition to dilate, though still very firm, hard, and rigid; and I had serious fears that incision of the os uteri would become necessary.

All things considered, I determined to wait and see if the faint hope of dilatation, which seemed to present itself, would be realized, and, whilst waiting, to continue the same course of treatment which I had hitherto adopted, and which consisted in preventing the total inversion of the vagina, and entire protrusion of the head of the child and uterus *en masse* during each pain, this accident threatening with each contraction of the uterus, indeed once happening to a considerable extent when I had been late in watching a pain. To effect my purpose I proceeded in the following manner:—Having replaced the uterus and vagina as well as I could, I watched carefully for each pain, and when it was about to commence I passed the fingers of my right hand into the anterior *cul de sac* of the vagina, and the thumb of the same hand into the posterior *cul de sac;* my fingers and thumb thus embraced the os uteri and child's head, and whilst it allowed the latter to press against and dilate the former, I supported the whole mass in its proper position, or nearly so; and thus, as I conceived, imitated nature to the best of my ability by keeping the uterus artificially suspended in the cavity of the pelvis, and maintaining a point of support to the uterus, to allow of the pressure of the child's head upon the os, and hence its further dilatation. For some time the dilatation continued very slowly, and I could feel, from time to time, that some abrasion of the anterior and posterior lips of the os had taken place. The os now very tightly embraced the head, the posterior lip being

soſtish, the anterior very hard and thick. At about half-past 11 o'clock, during a very strong pain, and whilst I was pursuing the same plan, I felt something suddenly give way, and the child was almost immediately born alive; in fact laceration of the posterior lip of the os uteri had taken place to, I suppose, an inch in extent. No flooding followed, and the placenta came away without any difficulty; except that with it down came the uterus and vagina. The laceration was then distinctly seen, and the whole of the os uteri swollen and tumid; this was easily returned; the patient was, as might be expected, much exhausted; a stimulant and dose of opium were given, and she was allowed to rest[a].

November 16th. A good deal exhausted and very sore. Countenance good; tongue moist; pulse 80, soft; no fever. Passed her water twice, and had two motions; no swelling or tenderness in the abdomen; she is in good spirits; she sat up when her bowels were relieved; the uterus then came down and remains down now; the laceration and the abrasions on the anterior lip can be seen. I returned the uterus, and desired that it might be returned as often as it came down, and supported by a perineal bandage, first, however, fomenting it well.

17th. Some diarrhœa and pain in the uterus, but no distention or general hardness of the abdomen; for this, a poultice; and some grey powder, with Dover's powder, was given; and under this treatment these symptoms gradually subsided.

On the 27th, "the pain and tenderness in the abdomen have quite subsided, and her health is much improved." To-day she told me that she was much neglected in her first confinement, and has had prolapsus ever since. About a year since she had retroversion of the uterus, followed by a miscarriage at the fourth month; since this time her uterus has descended daily, and has *prolapsed every day during her pregnancy, even to the day of her delivery, when it had been down to a considerable extent, forming a large tumour externally.* At times she has had considerable discharge from it, and was aware of ulceration existing round the os. It has frequently been down as large as her two fists; and although she has been a great sufferer during her pregnancy, she has not consulted any medical man about it, but allowed it to progress without interference.

[a] It may be asked, why was chloroform omitted? and why were incisions not practised before? In reply to both these questions I must say, that the case occurred at some distance in the country, and circumstances so happened that I was unable to get any professional assistance. I was unwilling to trust the administration of chloroform to a non-professional person, or to incise the os uteri without the sanction of a brother practitioner.

On the 29th of November she had a severe rigor, followed by well-marked symptoms of inflammation of the pelvic fascia, threatening suppuration; this, however, was averted. On Christmas Day she sat up for the first time, her health being good, and her spirits excellent. The prolapsus returns whenever she sits up, but the uterus is easily restored to its proper place when she lies down. The patient continues to suffer from prolapsus in an extreme degree, and the best devised means I have been able to suggest have failed to support the uterus in its proper place. Her health now (February 24) is good, but she suffers much from the irritation the prolapsed organ causes.

We may congratulate ourselves that cases similar to the one I have just related are of rare occurrence; and, so far as I am able to ascertain[a] very few have been recorded. I am indebted principally to Dr. Merriman and Dr. D. Davis for the information I have been able to glean on the subject. The former, in a short paper published in the Medical Times, gives some account of six cases which he had collected from various sources. The first is from the practice of Professor Rizzoli; but the Professor's account seems so meagre, as to render it almost useless.

The second case occurred in 1776, and is extracted from the Memoirs of the Medical Society of London. In this case it appears, that the protruded mass was wedged in the passage; for we are told that, "when mortification appeared imminent, the perineum was found dilatable: it was dilated, and the mass slipped back; subsequently pains came on, and the child was born by the natural efforts." The patient did well.

The third case occurred in 1763, in the practice of Mr. Antrobus, of Liverpool: "She went her full time, though the cervix became scirrhous from exposure. At the time of labour the first pains drew up the uterus; but, the waters breaking, it was again propelled down before the head of the child. Counter-pressure was therefore made, and the part lubricated. The child was born, and the uterus replaced." She did well.

The fourth was by Mauriceau: "The uterus had protruded, during labour, to the extent of half a foot, and was as big again as the head of a child. The os looked like a phymosis, of which the lips were three fingers' breadth thick, and quite livid. He introduced his hand by degrees into the uterus, and thus guided the head to its exit."

The fifth, by Portal, in a first pregnancy. There was pro-

[a] Systematic treatises on midwifery including those of Blundel, Burns, Denman, Dewes, Rigby, Ramsbotham, &c., are silent on the subject, and so are most authors on the diseases of women, including Sir C. Clarke, Bennett, Gooch, Ingleby, &c.

trusion when the orifice was only half a line across. He introduced first a silver sound, then a finger, and so dilated the uterus still more. After three hours of dilatation, the os was the size of a silver crown. An hour's cessation now took place, after which dilatation was resumed, by both hands being carefully insinuated, the bag of the waters assisted, and two pains brought the child into the world. The uterus was replaced, and she did well. She had a relaxation previous to marriage, which she could easily replace. During her pregnancy it ceased.

The sixth is from Smithe. In this case the os was pushed beyond the os externum by the pains. "During every pain," he says, "I kept up the child's head and the mouth of the womb, which I gradually dilated with my finger, till, being fully opened, it easily slipped up all round the head, and this, by degrees gradually opening the os externum, was safely delivered."

The seventh is by Mr. Gristock. A delicate woman was seized in labour with her third child; she had suffered from procidentia, and sometimes prolapsus, since her last pregnancy; the protrusion became greater in the third pregnancy; but, as it advanced, it gradually passed up. As labour came near, she soon became sensible of much weakness and bearing down; and at length, when her pains actually came on, she was much alarmed by finding a large fleshy mass had passed through the os externum, with a good deal of fluid discharge. Mr. Gristock was now sent for. He found the os uteri and a considerable part of the vagina protruded beyond the os externum. He placed her in bed, had her well fomented, and called a consultation. No dangerous symptoms presenting, it was determined to wait; when the pains became strong, it was thought advisable to expand the hand over the protruded part, so as to make the ends of the fingers afford five points of support to the prolapsed vagina. By degrees it appeared to recede during the pains; and at last, during a strong pain, the whole mass slipped up into the pelvic cavity; the child was speedily born; the placenta came away; the uterus contracted firmly, remaining in its proper situation. She was twice afterwards delivered by Dr. Hugh Ley under the same circumstances.

Dr. David Davies, in his Principles and Practice of Obstetric Medicine, gives the following cases.

1. A woman, thirty-two years of age, pregnant with her fourth child, was attacked at the full period of gestation with pains similar to labour pains. Her midwife intimated that

her delivery was near at hand. Three days elapsed, and no delivery took place. On a sudden, however, a prodigious exertion of the parturient power was made, and in a moment the whole gravid uterus with its contents presented itself bodily at the outside of the vulva. A consultation of physicians and surgeons was forthwith called. The midwife stated that the patient had strong pains for the entire period of three days: that, during the latter part of the time, they had indeed been exceedingly tempestuous, and that the intervals between them had rarely exceeded a quarter of an hour. She further stated that, during the force of the pains, the neck, as well as the parietes of the womb, remained as flaccid as during the absence of the pains, but that the womb sank gradually more and more towards the inferior aperture, as it seemed to obey the impulse of each contraction; the uterus was in a state of inflammation. Its orifice was scarcely sufficiently dilated to admit of the introduction of a finger. The fœtus, whose epidermis peeled off upon friction, appeared to have been dead about twenty-four or thirty hours. The woman died four hours after the accident[a].

2. A middle-aged woman had gone about ten weeks when she was attacked with prolapsus uteri. The uterus was pushed entirely out of the vagina, and presented at the external orifice of the size of a man's fist. It was returned, and a pessary used till it was forced out by regular labour pains. The child was delivered, but it was of small size. The mother recovered[b].

3. Dr. Davies' third case is taken from Haller's Chirurgical Disputations. In this case the procidentia was treated by delivery before any attempt was made at reduction. The intention of the entire paper (Dr. Davies observes) is to prove that delivery is much more easily accomplished in the prolapsed state of the uterus than after its reduction. This point is illustrated by the case of a woman, aged 30, who suffered from procidentia for two months, after which she was safely delivered. The uterus was then reduced, and afterwards retained by a pessary.

4. In the fourth case the uterus had fallen without the os externum, in consequence of some unusual pains in the abdomen. As it could not be reduced, fomentations were diligently employed. Parturient pains supervening, and the membranes remaining entire, the hand was introduced into the womb, and the child was turned, and both mother and child were saved. The secundines adhered, but were subsequently extracted. Fo-

[a] Corvisart's Journal, tom. iv. p. 264. [b] Smith's Cases.

mentations were again employed, and the uterus was reduced. The woman perfectly recovered.

5. A woman, who had been subject to prolapsus during gestation, experienced a repetition of it in consequence of bearing down too severely during her subsequent labour. The protruded uterus was about the size of a man's head. The midwife, not knowing how to act, requested the help of two professional gentlemen, who, in their turn, summoned a more extended consultation. The result was, that delivery was effected by section of the orifice and part of the neck of the uterus. A sound but dead child was extracted. Fomentations were applied, and the uterus reduced, and subsequently retained in its proper place by a pessary.

6. The last case was one by Hanerwolf: "The orifice of the uterus being partially dilated, the patient herself dilated it still more, the midwife assisting her, and the birth of the child was effected in this state of the womb. The uterus, after being washed and fomented, was returned and retained *in sitû* without the use of a pessary."

Two cases also are mentioned by Ashwell,—one, of a woman at Greenwich, an out-patient at Guy's, who told him that during the whole time of her last pregnancy the womb was external, and that the child was born whilst the womb was without the vulva. The woman afterwards suffered from irreducible prolapsus.

The second case is from Capuron[a]. A peasant girl, aged 14, made a violent effort during menstruation, which precipitated the womb externally; it was not reduced, and she insensibly became accustomed to its inconvenience. At twenty-two years of age she married. She enjoyed excellent health until aged 40, but was childless at that period; however, "un jour son mari, dilata l'orifice uterine y introduit le gland et determina la conception." When labour commenced, the pains were regular, but insufficient to expel the fœtus, especially as the neck of the womb, its mouth, and sides, had acquired a cartilaginous hardness. A double incision was made to enlarge it; the labour terminated favourably; a full-grown dead infant was born, and at the end of two months the woman had perfectly recovered.

From a review of the fourteen cases above detailed we find:—

That two cases were primiparæ; four, multiparæ; in eight, the number of pregnancy was not named.

[a] Maladies des Femmes.

That in two cases the head presented; in twelve, the presentation was not named.

That in four cases there was great rigidity of the os; in ten, the state of the os was not mentioned.

That in thirteen the prolapsus was complete; in one, this was not mentioned.

That in one case venesection, tartar emetic, opium, remedies calculated to overcome rigidity, were used without benefit; in four, counter-pressure was used; in four, dilatation; in four, the mode of proceeding does not seem clearly related; in two, incisions were practised; in one, turning.

In twelve cases the patients recovered, I presume with prolapsus uteri remaining; in one, death occurred; in one, recovery without prolapsus.

Rupture of the cervix uteri took place in one case.

The most striking fact arising from the above summary is, that out of fourteen patients who suffered from so serious an accident as prolapsus uteri during labour, thirteen recovered. Hence in these cases we have much to hope for, however serious they may seem at first.

It does not appear that the evidence before us supplies materials for deciding upon the best mode of treatment in these cases, for opinion seems to have been pretty much divided amongst the persons who conducted the cases recorded,—for four used counter-pressure; four, dilatation; four did not record their proceeding; two practised incision; one, turning. But the accounts of most of them are so meagre that we cannot attach much importance to them as guides to practice.

Counter-pressure, dilatation, and incision, are the modes of treatment which were most practised, and which seem most naturally to present themselves to the mind as the means best calculated to meet the difficulties we have to contend with, and on each of these a word may be said.

Counter-pressure, and by this I mean supporting the uterus *in sitû*, seems to be applicable in all cases of prolapsus during labour. It was used in four of the cases reported,—indeed, on seeing a case this mode of treatment at once suggests itself, (at least it did so to me and to three other observers, though I had never before witnessed such a case, or contemplated the possibility of one occurring). For, on seeing the uterus and vagina protruded, and reflecting how the uterus is naturally suspended in the pelvis, it follows almost as a corollary to the mind, that by supporting the vagina by means of the points of the fingers, and thus maintaining its proper *cul de sac*, a point is afforded for the uterus to act from, from which the head of

the child or the membranes, if entire, may press upon the os, and thus facilitate dilatation.

Some of these cases, however, are attended with extreme rigidity, and spontaneous dilatation may not be so easily effected, and then mechanical dilatation or incision must be decided upon.

Mechanical dilatation was performed in four of the cases,—but these four cases all occurred when mechanical views of parturition were prevalent, and long before the physiology of labour was understood. Independently of any injury which might be done to the os uteri by the act of dilatation, I think that upon physiological grounds there are strong objections to it,—for if the views promulgated by Dr. Tyler Smith be correct, and of their general truth I feel no doubt, then by the act of dilatation we should be running great risk of producing violent uterine action, by stimulating the reflex function of the uterus, and thus probably induce the greatest danger we have to fear,—viz. violent pains and laceration of the cervix or body of the uterus. Hence I should not be disposed to try dilatation were another case to come under my observation.

Incision of the cervix was practised in two cases, and both did well. During the last few years a good deal of discussion has taken place on the propriety of incising the cervix in cases of extreme rigidity of the os uteri, and names of high repute are ranked amongst its advocates—Murphy, Lever, Tyler Smith, Kennedy, &c.

Dr. Murphy observes: "After all, in making incisions we are only imitating nature, who, in her own way, often incises the cervix,—you cannot go wrong in following her example, and therefore, when you meet with these very embarrassing cases (simple rigidity), I feel justified in recommending you to incise the cervix;" and Dr. Lever considers that "the operation is free from danger or pain, or fear of hemorrhage." Dr. Smith also recommends it in extreme cases of rigidity.

Dr. Ramsbotham, in the last edition of his work, whilst arguing generally against the practice, and looking upon it in a much more serious light than Dr. Lever seems to do, would still allow it, but "only with extreme caution in unmanageable cases, and then not till all other means of procuring dilatation had failed."

But if there can be an extreme case, I conceive that such a one as that I have recorded must be ranked amongst the number; and remembering the imminence of the danger, the anxiety it creates, and the probable result of waiting too long, —laceration or rupture,—I am disposed to think that, after well

weighing all the facts and the authorities I have been able to consult, if another case should occur to me, I would try counter-pressure for a time, and if then the rigidity continued in spite of the ordinary means of overcoming it, I would incise the os; and I am the more disposed to this conclusion by remembering the admitted uncertainty of all the means which have hitherto been devised for overcoming rigidity of the os uteri.

Art. XII.—*Some Observations on Sore Throats, and their relation to Scarlet Fever*[a]. By James Bower Harrison, F. R. C. S., &c., Higher Broughton, Manchester.

It has long since been remarked, that during the prevalence of scarlet fever cases of sore throat are common, but I am not aware that any attempt has been made to classify these cases, or ascertain how far they are distinguishable from ordinary quinsy. With a view to ascertain this point, I have brought together a few instances from my note-book, which, however, were originally recorded with no such design, but were entered merely in the way of memoranda at the time of their occurrence. I hope the brief remarks which I have ventured to add to them may appear only as the natural reflections which would arise from their consideration.

A lady consulted me in July, 1847, respecting a sore throat. She had been occupied as governess in a family where scarlet fever had prevailed. The appearance of the throat was that of ordinary quinsy, the tonsils being preternaturally red and enlarged. I prescribed leeches, aperients, and gargles, but the throat got worse; the patient became unable to swallow, or indeed to open her mouth so as to render the state of the throat perceptible. I conceived that matter had formed, but scarifications liberated none, and it was difficult to make these with any degree of precision. After a time amendment gradually succeeded, but there was no evidence of the discharge of pus.

This case was, in all respects, so like ordinary quinsy, that, if it had not occurred in immediate connexion with the cases of scarlet fever, it would scarcely have deserved a remark. It may be observed, however, that the lady who had the quinsy

[a] Read before the Epidemiological Society, at the Meeting held March 7, 1853, at the House of the Royal Medical and Chirurgical Society, 53, Berner's-street, London.

was older than the children who were the subject of scarlet fever.

In May, 1848, I visited a little boy who had scarlet fever. He had the disease in a sufficiently marked manner, although mildly. During his illness, an elder sister began to complain of sore throat and headach; the papillæ of her tongue were elevated, and the tonsils enlarged and painful; the lymphatic glands of her neck were subsequently much swollen, but no rash made its appearance. I was given to understand that this lady had previously had the scarlet fever. A younger sister next fell ill, and she had the scarlet fever in a distinct but mild form. Although in the second instance the young lady had a somewhat elevated condition of the papillæ of the tongue, I should not have called the complaint scarlet fever if I had met with it in an isolated form, nor can I indeed properly say that it was such. But there seems some reason to suppose that this lady was not readily susceptible of the scarlet fever, and that the influence of the poison on her gave rise to a complaint which was not distinguishable from the common cynanche.

A single instance of this nature might indeed be attributable to coincidence, but many may be added which could scarcely be considered of fortuitous occurrence.

To resume, however. On the 7th of September, 1848, a man applied to me about what he conceived to be a syphilitic affection of the throat. He said the complaint had been contracted about eighteen months before; his voice was *husky*, and there was a deep blush of red on the soft palate and tonsils; the soft palate bulged forwards as if there was a collection of matter. I did not feel satisfied that the case was one of syphilitic sore throat, though I thought it possible that he might have some taint in the constitution. Some little time afterwards his daughter began to suffer from a like affection. There was the same bulging of the palate, and the same difficulty in opening the mouth, and in deglutition. In this case there was not the slightest suspicion of venereal taint. It was treated as a common sore throat, and got better. Afterwards another daughter had a sore throat, with fever, but also got better under ordinary treatment. These cases seemed like common quinsy, and yet one could scarcely imagine that three consecutive cases should occur in one family without believing that there existed some contagion. Were they dependent on the poison of scarlet fever, operating, as I conjectured it did, in the example recently mentioned, on a constitution not susceptible of the ordinary complaint? I have subsequently attended the family for many

years, but have had no reason to suppose, from anything which has transpired, that the man's sore throat was of venereal origin.

On the 25th of September, 1848, I was requested to visit a litte boy who had been at a school where scarlet fever was prevalent, and had returned home ill. He complained of sore throat, and had a hot skin and a quick pulse; he had vomited before my arrival; I noticed that he swallowed his saliva with difficulty, and in the manner observable in ordinary quinsy; the papillæ of the tongue were elevated, but there was no fur upon it. For several days he was unable to take his food, but he gradually got better, without any rash making its appearance. I was naturally asked whether the case was one of scarlet fever? I replied, that it was not easy to speak very positively, but that I thought it most probable that the complaint was scarlet fever, in a mild and scarcely recognisable form.

A lady was taken ill on the 7th of April, 1848. She had a sore throat, and her tongue was thickly coated, and the papillæ elevated; her pulse was very rapid. She soon fell into a state of extreme prostration: the tongue became dry and glazed; and subsequently the inside of the mouth was covered with thrush-like deposits; the glands under the jaws became rapidly enlarged; she had no rash, but eventually the skin desquamated, and large collections of matter formed in the neck, excavating, or rather dissecting out, the sub-cutaneous structures. In a note, which I made at the time, is the following passage: "Her appearance is like that of a miserable and destitute pauper in a state of starvation; the complexion bad, and the skin dirty-looking, and covered with desquamating cuticle; the teeth loaded with thick and black sordes; the tongue and mouth with aphthous patches; the body bent, feeble, and emaciated; she is unable to turn herself in bed." Eventually she got well, but it was after a long and tedious illness, and a troublesome suppuration both of the neck and ears; she had no rash at any period of the complaint.

On the 17th of April a servant girl who had been waiting upon her fell ill of scarlet fever, with a well-marked rash, and with all the other characteristic symptoms. At a later period the lady's father became ill: he had a sore throat, a quick pulse, and a general febrile disturbance. After being confined to bed for many days, he gradually recovered, but was for some time in a state of considerable debility. Previously he enjoyed remarkably good health. The mother next

fell ill, but perhaps as much from exertion and anxiety as from any specific ailment.

I think there can be no doubt that the first case was one of scarlet fever, but I could not pronounce confidently in the beginning; and I eventually formed my opinion rather from the severity of the after-symptoms, and the supervention of fever in the servant, than from any striking peculiarities in the disease.

On the 18th of June, 1850, I was requested to visit a little boy, eight years of age, who, on his return from Southport, had been seized with scarlet fever. He became comatose almost immediately, and died in about five days. The glands under the jaws had become rapidly and greatly enlarged.

A little girl in the same family fell ill the day after, also became comatose, had glandular swellings, and died after an illness of about the same length.

Another little girl, the only child left in the family, also sickened on the 21st, but she was less comatose, and eventually recovered.

In these cases the rash was well marked, the heat of skin very great, and there was no recession of the eruption. During the illness of these children the nurse became ill. She had a sore throat and a flushed face, but could not be said to have the scarlet fever. The tonsils were enlarged and red, but the tongue had not the cream-like fur which is often noticed. She underwent no particular treatment, but trusted to domestic means, and got better.

A young woman who came to assist in the house, and to reside there in order to take care of the children, also had a sore throat, became feverish, and was obliged to go home. She recovered without medical aid. These latter cases resemble some of the others which have been related.

In January, 1850, two children were taken ill with sore throats; a slight rash made its appearance on *one* of them, but there was none on the other. In both instances the papillæ of the tongue were elevated, but there was no other peculiarity. If it had not been for the appearance of the rash in one case, I could not have pronounced on the nature of the complaint in either. The children could scarcely be said to suffer any material disorder.

In 1851 a servant girl became ill with the scarlet fever; she had it in a marked and somewhat severe form, and eventually was removed to the Fever Wards[a]. The daughter of the

[a] The name given to the Hospital for Fever in Manchester.

gentleman with whom this servant resided afterwards fell ill of the scarlet fever, which she had in a mild form. Her sister was removed from the house by my desire, though I was told that she had previously had the scarlet fever. On her return, however, she likewise sickened of it. An infant was in the house, and it being thought desirable to have a wet nurse, a young woman was procured to suckle the child. (I may remark, by the way, that, at this period, the neighbours at the next house had the scarlet fever amongst several members of a young family.) After a short residence the nurse took ill with shivering, sore throat, and rapid pulse; the skin was bathed in a profuse perspiration; the face was somewhat flushed, but there was no distinct rash; the tongue assumed the character peculiar to fever after a day or two had elapsed; the appearance of the throat was such as occurs in ordinary quinsy,—the left tonsil suppurated. I was reluctant to consider the case as scarlet fever, not thinking that I had sufficient grounds for viewing it in that light, at the same time I admitted that the case was suspicious. At the request of the family she was, in the end, removed to the Fever Wards, as the case seemed, under any supposition, a proper one for admission into the hospital. Some little time afterwards, I called to make inquiries after her, and was informed by the late Mr. Ingham, the then resident officer, that after her reception into the house there were undoubted evidences that her complaint was the scarlet fever. In this case, notwithstanding the scarlet fever had existed in the house, I did not feel certain that the case was of that nature; and the early occurrence of perspiration, and the suppuration of the tonsils, made me indisposed to class it with the rest.

I have thought, from time to time, that I had discovered some little points of diagnostic value, but most of these I have subsequently abandoned as deceptive, and greater experience has only led me into greater hesitation.

A little boy was taken ill with scarlet fever. In the first instance he had a diarrhœa, which, however, in a great measure yielded to treatment. The glands about his jaws swelled rapidly, and the throat, so far as I could see it, presented a sloughy appearance. The breathing soon became difficult, and the fluids which he drank ran out from the nostrils. He died after a short illness. The rash had been well developed.

The child's mother next took ill; she had a furred tongue and a quick pulse, but no rash manifested itself. The throat ulcerated, and glandular swellings showed themselves at the angles of the jaws. This case gave me some uneasiness, but she did well in the end. I became ill myself during my at-

tendance on her. I did not take the scarlet fever, which I previously had, but I was faint and giddy, and unable to attend to practice.

A young woman was taken with shivering, pains in the limbs, sore throat, and redness of the skin. (The influenza was prevalent at the time, as well as the measles and the scarlet fever.) The redness of the skin was too slight to be called a rash, and I felt uncertain whether to consider the case as one of scarlet fever. I expressed my opinion as to the impossibility of a positive conclusion. In the meantime, the case did well. But the young woman, who was in domestic service, was so imprudent as to expose herself to cold in cleaning the steps at the hall-door. Her breathing then became difficult, and the secretion of urine very scanty, but there was no dropsy nor cough. Her recovery was very slow and imperfect.

A little girl came to assist as a servant, at a house where there was scarlet fever, but she herself had the complaint previously. She soon became ill, however, had a sore throat, and the papillæ of the tongue were raised. She recovered somewhat rapidly, and without treatment.

I could enumerate many more instances of a similar nature, but I should only render these observations tedious; and every practitioner, must, I think, have met with many like instances. It appears, then, from the contemplation of such cases, fair to conclude, that the poison of scarlet fever, when operating on constitutions which are incapable of showing the complaint in the usual form, produces an illness which cannot always be distinguished from the ordinary quinsy. This inference is rendered probable, because many cases, which might otherwise have been considered as of a questionable nature, have been found associated with genuine instances of scarlet fever, or have followed the fever in immediate succession. Moreover, these milder or more doubtful cases have presented many points of similitude amongst themselves. I shall now proceed to consider some cases which are, perhaps, of a still more equivocal character, inasmuch as they are not found in immediate connexion with cases of the ordinary scarlet fever. It is quite possible, however, that these complaints may be of a similar nature to those which have been already related. Some will be found to have commenced with considerable activity, and to have as quickly subsided; others to have been slow in their approach, and as tardy in their departure.

On the 4th of December, 1845, I was requested to visit a young woman, a servant girl, who, I was told, had got a fever. She had called upon me the day previous, but, regarding her

complaint as one of ordinary quinsy, I had thought no more about it. I now found her throat inflamed with small points of exudation on the tonsils; the tongue was furred, and the pulse 160 in the minute; the skin was, however, in a profuse perspiration. I directed her to be removed to the fever hospital. The next day I called to see her at the hospital. She had a slight rash on the skin, and the tongue had the appearance commonly manifested in the scarlet fever, but in a day or two afterwards she was quite well.

On the 9th of December in the same year, a servant boy called upon me, stating that he had a bad cold, which he attributed to an imprudent change in dress. He had a sore throat and a very quick pulse, and stated that he had rigors; but his tongue was not much furred, and he said that he had slept well the night before. The scarlet fever was prevalent in the neighbourhood, so that I concluded his case to be such, and sent him home with a letter to his employer to that effect. In a few days he was quite well.

On the 25th of March, 1847, I was requested to see a young woman in domestic service, her mistress fearing that she had taken a fever, and being afraid of infection. She had a quick pulse, an inflamed throat, and white specks of exudation on the tonsils. She had aching pains in her limbs and a trembling of the body. An attempt was made to get her into the Fever Wards, but it did not succeed. I applied some nitrate of silver to the throat, and prescribed some medicine for her. The following day she was almost well.

On the 26th of October, in the same year, I visited a young woman who had a flushed face, sore throat, headach, and quick pulse. There were small exudation specks on the tonsils. On the following day I touched the throat with the nitrate of silver, and on the 28th she was well, or nearly so.

A man sent for me on the 16th of March, 1848. His face was flushed, his throat sore, and the skin hot. He had been attacked with shivering, and had been unwell for seven or eight days previously. His wife was a patient of mine at the time with a sore throat. There was no rash apparent in either case, and none showed itself. These cases were treated like the former, and soon got well. In the wife's case there was a small sloughy-looking sore on the tonsil.

A lady sent for me in November, 1849, to see her servant. The patient had a flushed face, a rapid pulse, and a sore throat. I was pressed to give an opinion as to whether she was in a fever. I said that possibly she might be in the commencement of the scarlet fever, but that I had seen cases pre-

senting the same aspect suddenly get better. I touched the throat with the nitrate of silver, and prescribed some medicine for her. The next day she was nearly well, and on the third quite so.

A gentleman sent for me in September, 1850. He had been seized with a shivering fit, and was apprehensive that it was the commencement of a fever. I found him in bed with a hot skin, a rapid pulse, and a sore throat. The papillæ of the tongue were a little raised. On the following morning I found the right tonsil much swollen, and the left had some specks of exudation on it. In the end the right tonsil suppurated. On the night of his attack he perspired freely. This case had a close resemblance to some of those which have been related; and if scarlet fever had been present in the family, would have been classed with it.

On the 23rd of May, 1852, I was requested to see a young gentleman who was taken ill. His face was flushed, his tongue furred, his throat sore, and the neck swelled on the left side. No rash made its appearance, with the exception of some petechial-looking spots on the back of the wrist; his pulse had a jerking character. He got well after a short illness.

I think in these cases, which are in all probability instances of modified scarlet fever, that the tongue will generally be found less furred than in the common complaint, and the attack more sudden, and less frequently preceded by vomiting. I imagine also that the skin is more apt to perspire spontaneously; yet I am free to confess that I cannot entirely rely on these distinctions. My observations, in fact, lead me to question whether the complaint may not exist in all gradations, and be as common in the less noticeable forms as in the more apparent.

When the symptoms of scarlet fever are well developed, there are few complaints which can be more readily distinguished. But, on the other hand, there are, perhaps, few diseases which present themselves in such varieties of degree or diversities of form. I need not here describe the ordinary characters of the scarlet fever. In doubtful cases some information may be gained by attention to the condition of the skin and the kidneys. In affections which simulate this fever, a subsequent desquamation of the cuticle, or an albuminous condition of the urine, might lead us to pronounce more positively on the nature of the foregoing disorder. The full development of the rash has generally been considered a favourable sign; but I have known many cases of an unfa-

vourable or fatal kind, in which the rash has been both full and persistent. The patient, after doing well for some portion of the complaint, has become worse without any very obvious reason:—Where the glands swell very rapidly and largely about the jaws, the cases are always severe, and generally fatal.

Great drowsiness, at the commencement of the complaint, I have always considered to be a bad prognostic.

Diarrhœa or frequent micturition is not a good indication. An acrid and excoriating discharge from the nostrils is a still worse sign, particularly when accompanied by a *snuffling sound* in the breathing. When the rash has a petechial kind of appearance, and the odour from the body is unnatural, it may be presumed that the fever is of a low and dangerous type. In pursuance of these remarks on sore throats and scarlet fever, I may mention a form of disorder which is not unfrequently met with, and often loosely designated influenza, but in which the throat affection, though not prominently complained of, is, in reality, of paramount importance. The patient has aching pains in his limbs and back, with a quick pulse; he has lassitude, and says that he has a bad cold; but he does not cough nor complain of his respiration. The medical adviser may be apt to regard the complaint as one of those numerous little anomalous affections which it is impossible to class with any other; but if he happen to examine the throat with a spoon, he will perceive an abraded appearance at the back of the pharynx as far as he can see, and sometimes a few minute specks on the tonsils. If the patient be questioned on the subject, he will say that his throat is sore, but if not asked, will probably not notice it of his own accord. The tongue is generally clean, but has, in some cases, an abraded appearance in places. Yet the state of the throat does not seem adequate to produce the general *malaise;* and in all probability the part which is visible does not represent the whole of the malady. At any rate, I have found in these cases that a local treatment is in itself, to some extent, efficient; so that I believe the disturbance of the system is in a great measure a sympathetic one. It will not be necessary to relate many of these cases; one or two may suffice.

A gentleman sent to consult me on the 3rd of May, 1850. He complained of aching pains in the limbs, general uneasiness, lassitude, and sore throat; the skin was hot, and the pulse quick. On looking into the throat, I found the back of the pharynx presenting superficial abrasions, besides which there were small exudation spots on the tonsils. The tongue

was clean. The wind had been for some time in the north-east. Probably these cases are more commonly met with during an east wind.

In December, 1851, I was requested to visit a young woman, who was employed as a wet nurse. She complained of aching pains in the back and limbs, with sleeplessness, and general *malaise.* She looked ill, had a quick pulse, and said she had a sore throat. On examination the throat presented the appearances already named. On the following day I found her much in the same state. I prescribed quina with dilute sulphuric acid, under which treatment she gradually improved in every respect. The affection of the pharynx seemed to extend beyond the reach of observation. The weather was moist at the time, and had been so for several days.

A young woman, December 12, 1852, was affected with headach, loss of appetite, and pains in the limbs. She said that her throat was sore. On examination, I found the peculiar abraded appearance of the pharynx, but she represented the pain as beyond the reach of observation. She recovered slowly under the use of quina and dilute sulphuric acid. In this case the tongue was loaded with fur, which is not common in these cases, or, at least, not a necessary part of them.

A young gentleman sent for me on the 12th of April, 1852. He had been affected with sore throat, shivering, and pain in his limbs. On examining the throat with a spoon I found the upper part of the pharynx superficially ulcerated, having what I have termed an abraded appearance. It seemed that the ulceration extended further than could be traced, and appeared to increase as it extended. I contented myself with prescribing an acidulated mixture of quina and a couple of aperient pills. It may be remarked, that the use of the nitrate of silver in these cases, as an application to the back of the throat, would in most instances expedite the recovery, but in many, the local affection extends beyond the sphere of observation; and it must be remembered that the use of nitrate of silver is to be avoided where it is possible, from its injurious action on the teeth; yet it will occasionally be desirable or necessary to resort to it, and the application will be made in an eligible manner by the aid of a camel's-hair brush or small probang, saturated with the solution. The solid caustic should not be employed, from the possibility of its escaping into the throat, as it becomes softened by the saliva and loosened from the instrument in which it is contained. The writer remembers the occurrence of this accident in the case of a little patient, but no bad re-

sult followed, as the caustic was speedily removed, and fortunately had been coated with wax.

It sometimes happens that the mouth alone is affected with a kind of aphthous inflammation. The complaint does not extend to the throat, and is more painful than serious. The gums are intensely red, the tongue ulcerated, and albuminous-looking deposits streak the mouth; pustular spots form on the lips. I lately attended a gentleman for this affection, and the complaint was a little obstinate, though it never extended to the throat. It was attended with a profuse flow of saliva. I gave him the chlorate of potash, and I think with some benefit. I believe this complaint is sometimes epidemic.

These observations, then, would render it probable that the peculiar *virus*, which occasions the scarlet fever, is more frequently operative than is commonly supposed, and that it manifests itself in many irregular and masked forms of disorder. It may be possible hereafter to generalize more fully upon the affections which simulate scarlet fever; and in the mean time these cases and brief remarks are offered in the humble spirit of inquiry.

ART. XIII.—*On the State Poison of the Athenians, used in the Case of Socrates.* By JONATHAN OSBORNE, M.D., M R.I.A., King's Professor of Materia Medica, Physician to Mercer's Hospital.

"Cum in manu jam mortiferum illud teneret poculum, locutus ita est, ut non ad mortem trudi, verùm in cælum videretur ascendere."—CICERO, *Tusc. Quæst.* i. 29.

It is well known to the readers of history, that the death of many of the most eminent characters of antiquity has been attributed to poison. No doubt, a propensity towards the marvellous and mysterious has had no small share in those relations, and we are almost prepared to expect that such persons as have kept the world in a state of astonishment during their course of life should not disappoint us at its termination. We are led to expect that such, if not falling by the sword, should at least be cut off by poison, in order to avoid the common lot of dying in their beds like the rest of mankind. Amongst the great men of antiquity, a kind of martyrology might be composed of those suspected to have died of poison. On examining, however, the poisons actually known to the ancients, and then recollecting the great improbability that they were possessed of any which have eluded the research of

modern science,—it will be in our power to show, that, however great the number of cases in which poison was either administered or suspected, yet the number of poisons at their disposal was actually small, and so far limited as to enable us to identify them whenever we are furnished with the leading symptoms attending their fatal effects: a task, the performance of which would be more difficult, if not impossible, with the more extensive toxicology of modern times.

In Rome, the crime of poisoning is mentioned in the laws of the Twelve Tables (B. C. 449), but is evidently confounded with a belief in the potency of magical incantations. *Qui malum carmen incantasset, malum venenum taxit, dicitve parricida esto.* And this appears to have been enacted prospectively, and not with reference to any cases of the crime at that time committed; if it is true, as stated by Livy[a], that the first instance of a judicial trial for poisoning at Rome was in the Year of the City 422 (B. C. 329). This was occasioned by the death of a number of persons of rank at the same time, and with nearly the same symptoms. Suspicions were excited, and private information was given, that certain matrons were in the habit of concocting poisons (*venena coquere*). Two patrician ladies, who were in the number of the accused, declared that they were not poisons but medicines. Having been ordered to test their sincerity by drinking them, they at once acquiesced, and were joined by twenty others who had been engaged in the same pursuit. The result, however, was that they all died, and that in consequence of further informations, an additional number of one hundred and fifty matrons were condemned. The probability is, that these ladies were engaged in the benevolent design of supplying medicines for the relief of the sick, and that the articles they were engaged in were either *Veratrum album*, or *Helleborus viridis*, both of which were natives of Italy[b], and were used by the ancient physicians in the form of decoctions; but that, in the plenitude of their confidence in their virtues, they were unacquainted with their drastic and exhausting effects, when taken in an overdose. When we compare this transaction with the pictures handed down to us of Medea of Colchis, and of Circe of Italy, and with the witches of our own country, it appears inexplicable, how the female sex, so remarkable for the most disinterested acts of benevolence, should at such remote periods of time, and in such widely distant countries, have been accused of endeavouring to destroy their fellow-creatures. We

[a] Lib. viii. 18. [b] Savi, Materia Medica Toscana, 1805.

can only ascribe it to the eagerness with which they have always engaged in whatever appeared likely to alleviate pain or sickness, without the opportunity of acquiring the necessary knowledge, or of foreseeing the probable consequences. Hence, in rude and ignorant ages, their generous efforts in practising medicine have been misinterpreted, and in so many instances have met but an indifferent reward.

The oldest account now extant of poisons is the poem of Nicander of Colophon (Αλεξιφάρμακα). The author lived during the reign of Attalus Philometer, the last King of Pergamus (B. C. 134), and the advantages he enjoyed were most extensive. The king—inheriting in a large degree the love of the natural sciences, which was so conspicuous amongst the successors of Alexander—cultivated in his gardens several well-known poisonous plants, as hyoscyamus, aconite, hemlock, and hellebore, with which he made experiments, in order to ascertain to what extent they were under the control of antidotes. In this poem, however, we have no account of any vegetable poisons, except those mentioned. His knowledge of the poisons of various serpents, appears founded on observation. His blistering fly is not that at present used, but the *Melöe cichorei*. We shall have occasion to refer to his description of hemlock, when we come to speak of the symptoms produced by it.

Mithridates, the celebrated King of Pontus, the extent of whose attainments may be estimated from the statement of Pliny, that he could speak twenty-two languages so as to transact business with the deputies of as many different tribes, is related to have tested the powers of poisons and their antidotes by experimenting with them on animals. From the constant apprehension of being poisoned, he was said to have fortified himself against them by taking some of them daily, in combination with a suitable antidote, and then to have become poison-proof. We may, however, form a judgment of the feebleness of his poisons from Pliny, who has recorded one of those which he had for his daily consumption along with his antidotes. This was the blood of ducks, caught in a certain district of Pontus, and which were believed to live on poisonous food[a]. Another evidence of the narrow limits of the toxicology of his time is to be found in the composition of the famous Mithridate, which, if not actually his invention, yet is sufficiently authentic as to its antiquity. From this we are enabled to judge of the mode of action of the poison it was intended to combat. This

[a] Pliny, lib. xxv. c. 2.

composition, which was retained in the pharmacopœias up to the middle of the last century, consisted of fifty-four ingredients, in various proportions, well justifying the remark of Pliny, *Ostentatio artis et portentosæ scientiæ venditatio manifesta est.* But when all these ingredients are examined, they prove to be opium, valerian, and castor, with thirty-one aromatics, and eight stimulating gum resins, mixed up with some insignificant ingredients, in the form of an electuary, forming a combination resembling Dalby's carminative, well suited to quell the pain and disturbance caused by acrid vegetable substances, such as hellebore and aconite, but of no efficacy against any of the great poisons of our time.

At a later period, the paucity of knowledge with respect to poisons may be inferred from several other circumstances. A woman at Smyrna was accused before Dolabella, the Roman Proconsul in Asia, of having poisoned her husband. Dolabella, unable to come to a decision, referred it to the Areopagus, and this court appears to have served as a model of procrastination to some of the most eminent tribunals of our own time, for they evaded pronouncing any sentence, but cited the parties to appear before them at the expiration of one hundred years! Again, when Tiberius was said by Piso to have caused Germanicus to be poisoned, it is related, as the most convincing proof of the fact, that when his body was burned, the heart appeared entire in the midst of the flames.

At Nero's first attempt on the life of Britannicus, the poison, which was supplied to him by the famous Locusta, produced only an action on his bowels. A second decoction was tried on a goat, which having survived five hours, a still stronger decoction[a] was made and given to a pig, which died immediately. The poison thus tested was given to his victim with the desired effect. Three attempts, however, which he made to poison his mother failed, and he desisted, being under the impression that she had fortified herself by means of antidotes.

The most complete evidence of the limited toxicology of the ancients is to be found in the great work of Dioscorides, written in the reign of Nero. In this, which is a kind of encyclopædia of all that he had witnessed in his travels, or found recorded on the subject of the Materia Medica, there is one book (the sixth) exclusively devoted to poisons and their remedies. Omitting cantharides, and the articles derived from the mineral kingdom, as not belonging to our subject, the following are all the

[a] Iterum ac sæpius recoctum. Sueton. Nero, c. 34.

poisons known to him: Colchicum (Ἐφήμερον). Dorycnion, not identified. Aconite, and the honey of Heraclia in Pontus, where that plant abounded. Coriander (Κόριον), identified with our *Coriandrum sativum*, but stated to cause a temporary insanity, like that of drunkenness, irreconcilable with any modern observations. Psyllium, identified by Sprengel with the *Plantago psyllium*. Conium, of which hereafter. The yew (Σμίλαξ), well identified, and described as fatal to cattle. The juice of carpasus (Καρπάσου ὀπὸς), causing stupor and suffocation; entirely unknown. Sardonia (Σαρδονία πόα) a kind of ranunculus, from Sardinia, causing spasmodic motions of the lips (whence the term *Risus Sardonicus*) and also affecting the intellect. Hyoscyamus—Mandragora, nearly identified with *Atropa belladonna*[a]. Meconium, evidently opium, and described as the juice of the poppy. Pharicum—Toxicum, used by barbarians for poisoning arrows (whence the name);—if swallowed, causing inflammation of the lips, with furious madness, requiring the patient to be tied. Fungi, either taken in excess, or from some peculiar kinds intermixed, causing strangulation. White hellebore—Thapsia; doubtful whether *T. garganica*, or *asclepium;* described as emetic and cathartic. In the mineral kingdom he has gypsum, litharge, lime burned and slaked, sandarach and arsenicon, identified as the red and yellow orpiment. They both, as well as lime, described as corroding and torturing the intestines when taken internally. No acid was known in his time except vinegar, and even the effects of it were unheeded; for the accidents occurring from fluids being left exposed to the air in brazen vessels, he ascribes to some poisonous animal having drank out of them.

Bearing in mind how restricted and imperfect the toxicology of the ancients must have been, we now proceed to consider the circumstances attending the death of Socrates. He was poisoned in the first year of the ninety-fifth Olympiad (B. C. 402)[b]. "When the fatal cup was brought, he asked what it was necessary for him to do. 'Nothing more,' replied the servant of the judges, than 'as soon as you have drank off the draught, to walk about till you find your legs become weary, and afterwards lie down upon your bed.' He took the cup without any emotion or change in his countenance, and looking at him in a steady and assured manner, 'Well,' said he, 'what say you of this drink? May a libation be made out of it?' Upon being told that there was only enough for one dose, 'At

[a] Paulus Æginetus, by Adams, vol. iii. p. 240.

[b] Plato, Phædon.

least,' said he, 'we may pray to the gods, as is our duty, and implore them to make our exit from this world and our last stage happy, which is what I most ardently beg of them.' Having spoken these words, he kept silence for some time, and then drank off the whole draught. After reproving his friends for indulging in loud lamentations, we are informed that he continued to walk about, as he had been directed, till he found his legs grow weary. Then he lay down upon his back, and the person who administered the poison went up to him and examined for a little time his feet and legs, and then, squeezing his foot strongly, asked whether he felt him? Socrates replied that he did not. He then did the same to his legs, and proceeding upwards in this way showed us (Plato is speaking) that he was cold and stiff; and he afterwards approached him, and said to us, that when the effect of the poison reached the heart, Socrates would depart. And now the lower parts of his body were cold, when he uncovered himself, and said, which were his last words, 'Crito, we owe Æsculapius a cock. Pay the debt, and do not forget it.' 'It shall be done,' replied Crito, 'but consider whether you have anything else to say.' Socrates answered in the negative, but was in a short time convulsed. The man then uncovered him; his eyes were fixed, and when Crito observed this, he closed his eyelids and his mouth."

The mode in which I think it may be proved that hemlock was essentially the poison employed in this particular case, and that it was the state poison of the Athenians, is by reviewing the subject under three heads, viz., first, the name of the poison used; secondly, the botanical characters and collateral details respecting it; and thirdly, and chiefly, the series of symptoms preceding its fatal effects.

The poison which is called *φάρμακον* by Plato in the above-quoted passage is called *κώνειον* by Xenophon, in relating the execution of Theramenes; and it will be recollected that only forty years intervened between his death and that of Socrates; and the same word is used by Plutarch, in describing the state poison by which Phocion fell a victim to the Athenians in the year B. C. 317. But the most striking evidence that the state poison was commonly known at Athens by the name *κώνειον*, is afforded by Aristophanes, who was the well-known contemporary and satirist of Socrates. In "The Frogs," acted many years before his death, we have a passage which appears to have altogether escaped the observation of Dr. Christison:—

"Hercules. Then there is a short and beaten road—that by the mortar.

"Bacchus. Speak'st thou of hemlock, then?

"Hercules. Most certainly.

"Bacchus. A journey cold and winterly, forsooth, for it immediately congeals the shins"[a].

This passage, as well as another in the same play, on death by hemlock, is in much the same taste as the puns and other facetiæ on the subject of hanging, which are so well understood by the populace of our own times[b].

The Latin authors, and especially Pliny, use the word cicuta in all the cases in which they had occasion to mention the poison used at Athens, so that no doubt is entertained respecting the identity of κώνειον and cicuta. Dr. Sibthorpe, in the *Prodromus Floræ Greciæ*, says the modern name of hemlock is βρομοχορτον, but on this point he appears to have been misinformed, because in the Greek Pharmacopœia, published at Athens in 1837, which contains the modern vernacular names of all the medical plants of Greece, the name affixed to hemlock is κώνειου ποα, and this must be considered as the latest and best authority on the subject.

Next for the botanical description. It is true that from the want of a systematic arrangement, the plants mentioned by ancient authors are often difficult to recognise, and in some cases impossible. In the present case, however, the difficulty is greatly diminished by the combination of several circumstances, which, taken singly, would fail; but which, taken together, form an accumulation of evidence. Dioscorides (lib. iv.), describing κώνειον, says it has a knotted stem, like that of fennel; and Pliny says it is jointed like a reed. Dioscorides describes it as like the ferula, with a heavy smell, its branches shooting with umbels at their summits, a whitish flower, a fruit like that of anise, but whiter. From this it is evidently

[a] ΗΡ. ἀλλ ἔστιν ἀτραπὸς ξύντομὸς τετριμμένη
ἡ διὰ θυείας.
ΔΙ. ἀρα κώνειον λέγεις;
ΗΡ. μάλιστα γε.
ΔΙ. ψυχράν γε καὶ δυσχείμερον
ἐυθὺς γὰρ ἀποπήγνυσι τ'αντικνήμια.

[b] "Hangman. I'll throttle him.
Dancing Master. I'll make him cut a caper three story high."
—Swift, *Account of Wood's Execution.*

"*Epigram on a certain eminent Prelate, from the Times.*
"Suspend your judgment, Judas P———t cries.
Suspend yourself! th' indignant world replies."

an umbelliferous plant. Then, as to its size, he says it is about the same as that of fennel; and Pliny describes it as being about two cubits, that is, a little larger than the size the plant attains in our climate, as might be expected. Both agree in the heaviness of the odour; and Pliny mentions the *caulis nigricans*, which seems clearly to refer to the spots on the stems, which in this climate are of a dark purple colour, and serve, with those who are not botanists, to distinguish hemlock from all our other umbelliferous plants with which it could be confounded. The hollow root mentioned by Dioscorides, and after him by Pliny, and which appears to Professor Christison so inconsistent with hemlock, may very easily have been the result of a superficial examination, considering that the stem, as in other umbelliferous plants, is hollow down to the bottom; and this part of the description, if strictly interpreted, cannot be reconciled with any; for there is no plant with which I am acquainted, umbelliferous or not, that has a hollow root. Pliny has one feature in his description which appears to me peculiarly characteristic of the plant, when growing in rich soils, comprised in the following words, viz., *in cacuminibus racemosus*, pointing to the crowd of umbels and thickset leaves at the termination of every branch. Now the *Conium maculatum*, according to Dr. Sibthorpe, grows in various parts of Greece. He found it on heaps of rubbish near Constantinople, not unfrequently in Peloponnesus, and in the vicinity of Athens and Megara; while, according to the same eminent botanist, if the plant we have now been considering be umbelliferous, we are spared the labour of any further inquiry, for he says distinctly that NO OTHER POISONOUS UMBELLIFEROUS PLANT IS TO BE FOUND IN GREECE.

In addition to the above, Pliny states that the cicuta (described by him as the Athenian state poison) grows in Attica, and at Megara. He also describes the seeds and leaves as peculiarly fatal when drank in wine, and that the seeds are the most noxious as compared with the stem and foliage. Now, the conia in the seeds of hemlock has been proved, by the experiments of Professor Geiger, of Heidelberg, to exceed that of the rest of the plant in the proportion of 133 to 1[a]; and all who have used a carefully prepared tincture of the seeds, and made a comparison between it and the extract of the leaves, will be fully prepared to admit its superiority.

The identification of this poison with hemlock, by a com-

[a] Scharlau, Pharmacie. Leipzig, 1837.

parative review of their effects, is, however, the most interesting part of this inquiry. Professor Christison views them as quite irreconcilable. He says, the Athenian state poison must be considered as producing spasm and coldness of the limbs, gradually advancing to the internal parts, causing death eventually by acting either on the heart or respiration, and without affecting the functions of the mind to the very last—a combination of symptoms not to be produced by any poison now known[a]. But, with the utmost respect for so high an authority, I think that, when we make allowance for the looseness of expression belonging to authors describing the physiological phenomena, without having been professionally acquainted with them, the resemblance between what occurred at the death of Socrates and that produced by hemlock, according to modern observations, is so close that no reasonable doubt can be entertained of their being the result of the same agency.

In the first place, when the executioner informed him that his legs should be the first to become paralyzed, he must have done so from the observation of its effects on former occasions; and, to show that hemlock does first paralyze the lower extremities, I cannot do better than quote from the truly valuable series of experiments made by Dr. Christison himself. In the first of these, six drops of conia were dropped into the throat of a puppy ten weeks old. In thirty seconds there was sudden convulsive respiration, stiffness of the hind legs, immediately followed by great feebleness of these limbs. In a few seconds the fore legs also became very feeble. In sixty seconds after the introduction of the poison the breathing ceased, and slight convulsive tremors followed for a single moment more. In the second and third experiments with puppies the hind legs were first affected. In the last, after all its limbs became completely paralyzed, yet, when called to, it wagged its tail feebly, turned its head in the direction of the voice, and made a feeble effort to raise the head, but could not; its movements did not completely cease till forty-two minutes.

In the fifth experiment, on a rabbit, the hind legs became stiff in one minute and a half, and the fore legs not till two minutes and a half. In the ninth experiment, three drops of conia were dropped into the eye of a strong and furious cat. Instantly it made violent efforts with its fore legs to rub out the poison; while continuing so to do, the hind legs in forty seconds became affected with slight convulsions, and then grew so weak that it could not support himself on them. Soon after, the fore

[a] Transactions of the Royal Society of Edinburgh, 1836.

legs also became weaker and weaker; all voluntary motions, however, did not cease until ninety seconds had elapsed.

In the fifteenth experiment, when a solution of the extract of hemlock was injected under the skin of a dog's back, in three minutes and a half the hind legs were weak and rather stiff, and in six minutes the fore legs also, and in twenty minutes the respiration ceased. In all, the paralysis commenced in the hind legs; and in no one instance of the sixteen experiments related in Dr. Christison's paper did the symptoms occur in an inverse order. It is also to be noted, that in all, the eyes of the animals under the poison remained open. This was also the case at the death of Socrates; for, in the relation of Plato above quoted, it is stated that, when his body was uncovered, his eyes and mouth were closed by Crito.

The coldness of the limbs mentioned by Plato was a well-known effect of the state poison; and no doubt, allusions to it were amongst the best-established jokes at Athens, as we have seen in the passage quoted from Aristophanes. In Nicander, it is a leading characteristic (*ἀκρα δε τοι ψυχει*) of *κώνειον*, and also in Dioscorides[a] and Pliny[b]. In two cases recorded by modern observers, this symptom has been so remarkable, as to be specially mentioned. The first of these was published by Orfila[c], and has been subsequently imperfectly copied into some English works. "M. Haaf, being on garrison at Torrequemada in Spain, was sent for in the evening of the 2nd of March, 1812, to see a grenadier who was reported to be dying. He found him insensible, breathing with the greatest difficulty, and lying on straw in a small apartment, crowded, and filled with smoke. His pulse was small, hard, and down to 30; *the extremities cold;* the face livid, as if he had been strangled. He was placed in the fresh air. He was informed that, along with several of his comrades, this grenadier, who was remarkable for his appetite, had partaken more plentifully than the others of a soup in which hemlock had been mixed: that after supper they all appeared as if drunk, and felt pains in the head and throat. Immediately after supper, he undressed himself, lay down, and had fallen asleep, while the others sat at table talking together. In one hour and a half afterwards, when they began to feel ill, they observed him moaning and breathing heavily." After relating the measures employed, M. Haaf continues:—"After an emetic, he made several ineffectual attempts to vomit, and soon became evidently worse. Never-

[a] To be quoted hereafter.

[b] "Si enecat incipiunt algere ab extremitatibus corporis."—Lib. xxiv.

[c] Traité des Poisons. Paris, 1815.

theless, he still spoke, and complained of being very cold. Soon after, he lost his speech, and became unconscious, labouring with incessant palpitations. He died three hours after taking the soup."

The second modern case appeared in the Journal de Chimie Médicale for August, 1842. In this, a gentleman, having been in the habit of taking an infusion of aniseed, got by mistake an infusion of the seeds of hemlock. In a short time, alarming symptoms came on, and in particular, *coldness of the extremities* and slowness of the pulse, which, however, soon ceased after the employment of an emetic, and he recovered.

The report of the third case we owe to Dr. Hughes Bennet[a]. Duncan Gow, a tailor, forty-three years of age, was brought in the evening by the police into the Royal Infirmary, Edinburgh, apparently in a state of intoxication, but on being taken into the waiting-room was found to be dead.

Dr. Bennet, who made an examination of the body, recognised a quantity of vegetable matter in the stomach to be the leaflets of the *Conium maculatum*. He also identified it by the odour exhaled, when beaten up with a solution of potash, and by an inspection of the plant growing in the locality where it had been gathered.

The unfortunate man was in extreme poverty, and on this day had taken nothing except a share (along with two others) of half a mutchkin of whisky. The hemlock having been brought to him by his children, in mistake for parsley, he greedily ate it along with bread. Death must have taken place within about three hours and a quarter afterwards. Dr. Bennet was able to collect the following particulars from policemen and others, who saw him within this interval of time, and which I take the liberty of extracting from his interesting paper.

He was observed to stagger as he went down some steps. To some children who were sitting on the steps he said, "get out of the way of the lame horse." One witness described that he could not walk rightly, and was staggering as a man in liquor. His mode of progression attracted a number of boys and girls, who laughed at him, believing him to be intoxicated. He was heard to speak to them, but what he said is not known. In reply to a policeman, he desired to be taken to his own house at the top of the Canongate. He also said that he had completely lost his sight, and had not the perfect use of his limbs, but expressed his willingness to walk forwards till assis-

[a] Edinburgh Medical and Surgical Journal, 1845.

tance could be procured. Although supported by one arm, after moving with great difficulty past four or five shops, his legs bent under him, and he fell upon his knees, and when he was pulled on by the police, his legs were trailed after him. One of the police-officers, on first seeing him, pronounced that he was not drunk, and another confirmed it from the manner in which he was lying, and from the loss of power in the legs. Dr. Tait saw him in about two hours. He found his powers of motion completely prostrated; his pulse and breathing perfectly natural. He thought he perceived the odour of spirits about him, but the policeman thought otherwise. The heat of skin was natural. In forty minutes afterwards all motion of the chest appeared to have ceased; the action of the heart was very feeble; and the countenance had a cadaveric expression; pupils fixed. In this state he was brought to the Infirmary, and on his arrival was found to be dead. As Dr. Bennet observes, perfect paralysis of the inferior extremities was ascertained one hour and a half after the poison was taken, and that of the arms half an hour later.

The temperature remaining natural, has not been mentioned whether in the body or extremities, and from Dr. Tait being at first under the impression that it was a case of intoxication, it probably may not have occurred to him to examine this point closely. Besides, as fourpence was missing from his pocket, he may have taken whisky, with the effect of keeping up heat longer than usual.

The action produced on the mind by hemlock is, however, that which must excite the deepest interest when we believe it to have been the poison taken by Socrates. I well recollect my disappointment when, after reading the account of his life, I came to his last words, as reported by Plato. That he who had been the great moralist of antiquity, and who had taught such sublime doctrines on the relative duties of life, and on the future state of existence, should, after he had taken a solemn farewell of his weeping friends, and had lain down to die, rouse himself up in order to give directions about sacrificing a cock to Æsculapius, was so different from what the whole tenor of his life, and especially the concluding scene of it, would lead us to expect, that we must all have felt "what a falling off was there." Several commentators have acknowledged a difficulty in accounting for his offering a sacrifice to the divinity presiding over the medical art at a time when he knew it must be ineffectual. When, however, we become acquainted with the effects of hemlock on the human subject, we are enabled both to do justice to the fidelity of Plato as an historian, and to ac-

knowledge the greatness of the character of Socrates to the last. The fact was, that these words were spoken by him when under the influence of a narcotic poison, rendering him delirious, and we shall see that the peculiar character of this slight delirium requires only an attentive consideration to enable us to add it to the proofs that the poison was essentially hemlock.

A number of writers on the Materia Medica have been led, one after another, to set down furious delirium as a symptom of poisoning by hemlock. The foundation of this statement rests on two cases, both of them unworthy of credit. The first, said to be related by Kircher[a], of two monks who, having partaken of a dish composed of the roots of hemlock boiled up with meat, almost immediately became deranged: the one, rushing into a neighbouring lake, called out that he had become a goose; the other, tearing off his clothes, ran into the street shouting that he was a duck, and required the river to extinguish the fire in his intestines. The second narrative is by Mathiolus[b], of a vine-dresser and his wife, who took hemlock roots in mistake for parsnips. When they awoke in the night they became quite furious,—wandering about in the dark, knocking their heads against the walls, so that their faces in the morning were swollen with effused blood. It being impossible for Mathiolus to identify the plant, for the leaves were only beginning to shoot, and equally impossible to tell *what else* this old couple may have taken before going to bed: and the narrator of the former case being notorious for credulity, and not an eye-witness of the aquatic scene he describes; and both cases standing alone and completely at variance with others related by competent judges, they ought no longer to be allowed to mislead and disfigure the records of the Materia Medica.

Now, for the effects of κώνειον on the mind, as ascertained by credible authorities. From the description of Nicander, it abolishes the mental powers, producing what we call coma,

κεῖνο ποτόν δή γάρ τε καρήατι φόινον ιάπτει,

but no mention of madness or delirium; and in Dioscorides (lib. vi.), the following is the enumeration of the symptoms:—Vertigo, loss of vision, hiccough, *disturbance of the mind* (διανοιας παραφορα), coldness of the extremities, convulsions, suffocation, &c.

In Le Roux's Journal is the case of a man who took the extract of hemlock in order to obtain relief in a cancerous affection, but was obliged to diminish the dose in consequence of a *slight delirium* and tendency to faint produced by it.

[a] Wepfer. [b] Com. in Diosc., lib. vi.

In the three cases quoted (page 337), there was no delirium sufficient to attract notice. In the case of four Dutch soldiers poisoned in 1744, at Waltham, by eating the leaves boiled with bacon, in which all were seized with violent vertigo followed by coma, and two of them were convulsed and died in about three hours, Dr. Watson, who carefully examined the circumstances, mentions no delirium[a]; and in Dr. Bennet's case, the only part resembling delirium was the exclamation "get out of the way of the lame horse." Nevertheless, in my experience with the extract, and more especially with the tincture of the seeds, I have found that when perfect and profound sleep has not been obtained, dreams of a peculiar character have been substituted. In these the hallucination was rather agreeable than otherwise, generally recalling the ordinary occupation of the individual, but yet always accompanied by a sense of some impediment, or of some difficulty arising from a want of bodily power. For example, a horse-clipper recovering from acute rheumatism, after two grains of the extract, was exhilirated at finding himself working at his professional employment, and the only drawback was great stiffness and weariness in handling the scissors. A young woman, from twenty-five drops of tincture of the seeds, dreamt of her native village, and had all the surrounding scenery full in view, but was obliged to cross a river, and was in great terror from the difficulty of avoiding falling in. The dreams suggested by it are in imaginative range quite inferior to those of opium, and appear to be just of that extent that, when Socrates felt his limbs becoming powerless, he was likely to think of bodily infirmity, and then of medicine, and, by association of ideas, of Æsculapius and the cock, the bird usually sacrificed to that divinity.

Some experiments which I had occasion to make with the fresh juice of hemlock proved it to have a cathartic effect, from which the extract is comparatively free. Hence, if given in this form as a poison, it must have been liable to failure, and could not have been relied on. It would appear then absolutely necessary to combine it with some ingredient to correct this tendency. Nothing was so well suited for this purpose as the juice of the poppy, which was well known, and was also an indigenous plant in Greece. In the course of my trials with hemlock I was induced to combine it with opium, giving them in half doses conjoined, as an equivalent for one entire dose of either. In this way, not only was the cathartic effect of the hemlock prevented, but a deeper and more certain hyp-

[a] Watson, Philosophical Transactions, vol. ix.

notic effect was obtained. When the sleep was accompanied by dreams, the latter partook more of the hemlock than the opiate character. Thus one dreamed of his brother, whom he had not seen for two years. In another dream he was near his home in the country, but was pursued by some kind of nondescript animal from which he was endeavouring to escape, but ineffectually, on account of a numbness in his limbs. Another went to the fair to sell a cow, but was in great perplexity on account of a cow having strayed away from him. On another occasion he was near his residence, but could not get to it from a want of power in his limbs.

Now it is proved that some such combination was known at the time from the following passages in Theophrastus[a], who was born only twenty-eight years after the death of Socrates. These are his words:—"Thrasyas, the Mantinean, stated that, by making use of the juices of the κώνειον, the poppy, and such other things, he had discovered a substance which occasioned death easily and without pain, and so portable and minute that the weight of a δραχμα was sufficient and absolutely irremediable, and it was capable of being preserved for any time without alteration."

This statement has appeared to Dr. Christison to show that hemlock could not have been the state poison from its not being mentioned as such by this author, who lived when the memory of the transaction must have been fresh. A second perusal is, I think, sufficient to convince us that the object of the paragraph was not to state that κώνειον and poppy juice were poisons, a fact sufficiently notorious at the time, as we have seen, but that a certain individual had discovered a method of preparing them in a concentrated form, so as to insure both their potency and permanency. That a uniformly strong and certain preparation was a desideratum, at the time of the death of Socrates, is evident from the caution of the executioner, that none of the contents of the cup could be spared. Also at the death of Phocion we are informed that, having drank all the juice of hemlock, the quantity was found insufficient, and the executioner refused to prepare more unless he was paid twelve drachmas[b]; and when Seneca wished to poison himself, a friend and physician, at his request, procured for him some of the Athenian state poison, but when he took it the effect was inadequate[c]. From the account of this preparation being portable, surely it is not going too much on conjecture to infer that this was a skilfully made extract, or inspissated juice of

[a] Lib. ix. 18. [b] Plutarch, Phocion. [c] Tacitus, Ann. lib. lxiv.

both articles combined; and from what we know of the effects of these preparations, and of their doses, it is clear that death might be made nearly certain with a quantity not exceeding the weight of an Attic δραχμα, which was about sixty grains.

From these considerations I think it is nearly proved that the φαρμακον mentioned by Plato was essentially hemlock, and that there is also a strong probability that it was mixed with poppy juice; that during the operation of the poison, and after the numbness of the legs, it occasioned a slight delirium, under the influence of which the last words of Socrates were pronounced; that these words are to be set apart from the discourse previously delivered by him, and to be considered as the result of a narcotic poison.

Art. XIV.—*Observations upon Chronic Rheumatic Arthritis of the Shoulder.* By Robert W. Smith, M.D., M.R.I.A., Professor of Surgery in the University of Dublin; Surgeon to the Richmond Hospital; Fellow of the Royal Medico-Chirurgical Society of London; Secretary to the Pathological Society of Dublin, &c. &c.

(*Continued from* p. 16.)

In the Museum of St. Bartholomew's Hospital there are preserved two shoulder-joints, which present, in my opinion, well-marked examples of the effects of chronic rheumatic arthritis. They are the shoulders of the same person, and are thus described in the Catalogue[a]:—No. 59.—"A shoulder-joint. The capsule is thickened; in its upper part there is an irregular opening, and the tendon of the supraspinatus seems to have been torn away from the tuberosity of the humerus. The tendon of the biceps appears to have been torn near its attachment to the glenoid cavity, and has become adherent to the head of the humerus; a portion of it in shreds remains attached to the glenoid cavity.

"No. 60.—The other shoulder-joint of the person from whom the preceding specimen was taken. The capsule is thickened; the tendon of the biceps, separated from the glenoid cavity, has become firmly adherent to the head of the humerus, and an irregular, nodulated deposit of bone has taken place around the part to which it is now attached. It is presumed that the alterations in these joints were the effects of external injury, probably of dislocation of the humerus."

[a] Page 128, No. 59; and page 129, No. 60.

It is unnecessary to make any observation upon these specimens, the appearances described being so strikingly characteristic of the peculiar disease which I have been considering; a confirmation of this opinion is derived from the circumstance of the alterations in question existing in both shoulder-joints.

Mr. Barron has described three specimens of chronic rheumatic arthritis of the shoulder in the London Medical Gazette, but has assigned external injury as the cause of the alterations which were observed. In each of the three, he found that the tendon of the long head of the biceps was detached from the glenoid cavity, and adherent to the summit of the bicipital groove. In every instance there was some irregularity on the upper part of the glenoid cavity, where the tendon should have been attached; in one case, a part of the adjoining cartilage had been absorbed, while in the other two, the cartilage was removed from the head of the humerus. The absence of any other diseased appearance, he considers as evidence that the detachment of the tendon was the result of accident, and not of any morbid process. He has described the specimens under the name of "a peculiar formation of the biceps muscle," rather a singular title by which to designate a disease of the scapulo-humeral articulation[a].

Dr. Knox of Edinburgh was one of the first to notice the abnormal states of the intra-articular portion of the tendon of the biceps muscle. In one case, he found that the tendon ceased at the top of the bicipital groove, to the margins of which it adhered; a few fibres, looking like cellular threads, could be with difficulty traced, adhering to, and almost identified with, the internal surface of the capsular ligament. In three other cases the tendon had more or less disappeared; in one, altogether; and in another, the altered state of the tendon existed in both joints. From Dr. Knox's remarks, however, it does not very clearly appear, whether he considered these abnormal conditions of the tendon as the results of disease or injury; he merely observes, that injuries done to the intra-capsular portion of the tendon are exceedingly rare[b].

Mr. Stanley, also, many years ago, published an account of three specimens, in two of which he found the tendon of the biceps separated from the glenoid cavity, and adherent to the bicipital groove, while in the third it was displaced, and lay upon the great tuberosity of the humerus. "It may be a question," Mr. Stanley observes, "whether in these instances of

[a] Vol. xx. [b] London Medical Gazette, vol. i.

rupture and displacement of the tendon of the biceps, there had been a dislocation of the head of the humerus"[a].

When, however, I reflect upon the extreme rarity of rupture of the tendon in question, in any variety of luxation of the shoulder, and also upon the important fact, that the previous history connected with the specimens described both by Dr. Knox and Mr. Stanley, was totally unknown,—I cannot avoid adding these to the already extended series of cases of chronic rheumatic arthritis of the shoulder, in which the abnormal conditions of the joint were supposed to have resulted from accidental luxation, or other external injury. "The statement," as Mr. Adams has observed, "made in the report of various cases in surgical works, and in the catalogues of museums, in which we find it briefly noted, that the tendon of the biceps was found ruptured, has been made by the writers confessedly without any knowledge of the previous history of the case, the anatomical characters of which they are describing. On this account, we feel the less delicacy, after long and patient consideration of the subject, in expressing our conviction that the tendon of the biceps, in the numerous cases published, was not (as supposed to be) ruptured by accident, but absorbed as the result of disease."

To the preceding catalogue of examples of chronic rheumatic arthritis of the shoulder-joint, which, as it appears to me, have been described under the various erroneous appellations of:—Partial luxation of the head of the humerus; rupture of the tendon of the biceps; dislocation of the tendon from its groove; peculiar formation of the biceps muscle, &c.;—must be added those which have been recorded by Sandifort, Cooper, Hargrave, Soden, and Callaway. It is unnecessary, however, to enter into a full consideration of these cases, as this has already been done to a great extent by Mr. Adams in the valuable memoir to which I have repeatedly had occasion to allude. It will be sufficient to mention here the principal circumstances which demonstrate, that in every one of the instances to which I have just alluded, the various conditions described are to be referred, to the effects of disease, and that accident (whenever such was known to have occurred) is only to be looked upon, as Mr. Adams has observed, when commenting upon Mr. Soden's case, as the immediate exciting cause of the development of a local disease, a predisposition to which had already existed in the constitution.

In the case recorded by Sandifort, as an example of partial

[a] London Medical Gazette, vol. iii.

luxation of the head of the humerus from external injury, there existed a new articulating surface, formed partly upon the upper portion of the glenoid cavity, and partly upon the root of the coracoid process of the scapula. It was here and there porous, but for the most part covered with a dense, polished, ivory-like substance. The head of the humerus was enlarged, and its summit was in contact with the under surface of the acromion, coraco-acromial arch, and acromial end of the clavicle. The upper part of the greater tubercle had also suffered from attrition. No mention has been made of the state of the capsular ligament, or of the tendon of the biceps muscle[a].

In another case, described by the same author, the acromio-clavicular articulation was enlarged, and the acromion process divided into two portions.

The specimen described in Sir Astley Cooper's work is so familiar to the profession, and so generally quoted by surgical writers, that it is quite unnecessary to reprint it upon the present occasion. I may, however, remark, that it is much more extensively known as an instance of what it is not, than as an example of what it really is. It is this case which is always adduced in support of their doctrine, by those who maintain the possibility of the occurrence of such an accident, as partial luxation of the head of the humerus upon the outer side of the coracoid process.

Many years have elapsed since the publication of the great work of Sir Astley Cooper, and numerous and valuable are the memoirs and essays that have, since that time, appeared upon the injuries of the shoulder-joint; but in almost every one of these treatises, whenever mention has been made of this specimen (found accidentally in the dissecting room, and of the previous history of which all are ignorant), it has been referred to as an undoubted example of the effects of external injury, and as affording satisfactory confirmation of an opinion, the correctness of which is highly improbable, namely, that it is possible for the smooth and lubricated surface of the globular head of the humerus to rest permanently upon the margin of the glenoid cavity. And yet the real nature of the case recorded by Sir Astley Cooper, and its true pathology, have been, upon several occasions, clearly demonstrated, and brought prominently before the profession by Mr. Adams, as, for instance, in his observations upon the subject made to the British Association in 1836[b], in his memoir upon the "Abnormal Condi-

[a] Museum Anatomicum, vol. iv. tab. cli.
[b] See Athenæum, September 10th, 1836.

tion of the Shoulder-Joint," published in 1849[a], and in his numerous communications made to the Pathological Society of Dublin, and recorded in the volumes of both Series of this Journal. But when an erroneous opinion, pronounced by an eminent and justly distinguished author, once becomes generally diffused, it frequently happens that years must elapse before it is overthrown, and truth established in its place.

I cannot better express my own opinions upon the case in question, than by quoting the observations made upon it by Mr. Adams. This eminent surgeon, in the article already so often referred to, remarks:—"The foregoing dissection, which is illustrated by an engraving in Sir A. Cooper's work on Fractures and Dislocations, should not, in our opinion, be considered in any other light than as an excellent specimen of the anatomical appearances to be found in those who have had chronic rheumatic arthritis of the shoulder-joint, for we consider that these appearances were not the result of an accidental luxation, but the true effects of this slow chronic disease. If Sir A. Cooper had known anything of the history of the case during life, we might hesitate to call in question the opinion of so eminent an authority on such a subject; but as the only grounds he possessed for forming any opinion were derived from the mere anatomical appearances observed in the shoulder-joint of the subject in the dissecting-room, we conceive that every one who studies the report of this dissection, accompanied as it is by an engraving, is at liberty to draw his own conclusion as to what was the real nature of the case; and to us it seems quite clear that the appearances observed in the examination of the case referred to by Sir A. Cooper were exactly those most frequently found to be the result of chronic rheumatic arthritis as it affects the shoulder-joint. The new form assumed by the head of the humerus; the fact of the cartilage having been removed, and its place supplied by an ivory enamel—the piece of cartilage which hung loosely into the cavity being connected with the synovial membrane, at the upper part only, by two or three small membranous bands; the attachment of the capsular ligament to the coracoid process; all these circumstances, related in the above-mentioned case, strongly remind us of what we now know to be characteristic marks of the disease we have denominated chronic rheumatic arthritis, as we have so often met with them." "On the other hand, such appearances afford no evidence whatever that an accidental luxation was the cause of them: certain it is that appearances, exactly similar to those

[a] Todd's Cyclopædia, vol. iv.

described in Sir A. Cooper's case, have been met with in cases in which their causes could not be attributed to accident, because no injury had been received; while in others, it was useless to refer to accident, inasmuch as the morbid action had similarly affected *both shoulder-joints*, so that, by the dissection of such cases, we have convinced ourselves that *disease*, *not accident*, was the source of the morbid appearances." "Sir A. Cooper, in our opinion, somewhat *gratuitously* supposes that his specimen was the much sought-for example of the anatomy of the accident called partial luxation. We say *gratuitously*, because the previous history of the case he alludes to was unknown, and the accident *supposed* to have occurred."

With respect to the long head of the biceps, it is stated that it seemed to have been ruptured near its origin, for at this part the tendon was very small, and had the appearance of being a new formation. Those who have studied the pathology of the disease in question will, I imagine, infer from this statement, not that the tendon had been ruptured and became re-united, but that it was in that atrophied condition which is so frequently observed preceding its complete disintegration and removal.

Before leaving the consideration of this case, it should be stated, that even Mr. Bransby Cooper, so devoted a follower of the doctrine taught by his distinguished relative, has expressed his belief that partial dislocations of the shoulder are, in general, the results of disease of the articulation[a].

In Mr. Hargrave's case[b], recorded as one of partial luxation of the head of the humerus inwards, the result of accident (but the history of which is unknown), I may refer to the following circumstances, as constituting sufficient evidence that the appearances which he has described originated in chronic rheumatic arthritis, viz., the loss of the intra-articular portion of the tendon of the biceps muscle; the adhesion of the remainder of it to the bicipital groove of the humerus; the disappearance of the glenoid ligament; the existence of foreign bodies and osseous vegetations; the removal of the articular cartilages; the formation of the ivory deposit; the enlargement of the head of the humerus; the coracoid process having become articular; and the existence of chronic rheumatic arthritis in the corresponding acromio-clavicular articulation, a circumstance to which Mr. Hargrave has not alluded.

It is unnecessary, upon the present occasion, to give even an abstract of Mr. Soden's case[c], as it has appeared in the pages

[a] Lectures on Surgery. [b] Edinburgh Medical and Surgical Journal, 1837.
[c] Medico-Chirurgical Transactions, 1841.

of the former Series of this Journal, among the Proceedings of the Pathological Society of Dublin, where it has been made the subject of close investigation, and where it has been clearly demonstrated, that the fall alluded to in the history of the case had only this much to do with the partial displacement upwards of the head of the humerus which succeeded to it, that this accident became the starting-point of an inflammatory action of a rheumatic character, under the influence of which the head of the humerus became elevated to the acromion process, and the tendon of the biceps displaced; just as in the case of the comedian, Mathews (detailed by Mr. Snow Harris, at the meeting of the British Association in Dublin, in 1836), where a fall became the exciting cause of the development of chronic rheumatic arthritis of the hip-joint, giving rise to appearances which were supposed to indicate that an intra-capsular fracture of the neck of the femur had been produced, and had become united by bone.

I cannot, however, pass on without expressing my regret that, in several of the systematic treatises upon surgery that have recently appeared, in which Mr. Soden's case has been mentioned, no allusion whatever has been made to the elaborate analysis of it published in the Cyclopædia of Anatomy and Physiology[a],—I allude more especially to the works of Professors Ferguson and Pirrie, both of whom have noticed the case in question as an example of what Mr. Soden termed it, without appearing to be at all aware that any doubt has ever been thrown upon it. Referring the reader, then, to the analysis above mentioned for a complete refutation of Mr. Soden's view of his own case, I shall briefly detail the particulars of an analogous instance, of which I gave a full account at a meeting of the Surgical Society of Ireland in the year 1840.

The patient, an elderly female, had for many years suffered from chronic rheumatic arthritis of the right shoulder-joint, in consequence of which the head of the humerus became gradually displaced upwards, until at length it passed the level of the coracoid and acromion processes: it was also drawn forwards, so that the coracoid process was obscured, the infra-clavicular space increased in depth, and the posterior region of the joint much flattened. In Plate I., Figures 3 and 4 represent the right and left shoulders of this patient, and show a remarkable contrast in the external appearance of the two joints.

Upon examining the affected articulation after death, the

[a] *Loc. cit.*

capsular ligament was found enlarged, and almost as thin as synovial membrane; superiorly it was altogether deficient. The tendon of the biceps was perfect as to structure, but crossed the inner instead of the upper surface of the head of the humerus, the cartilage of which was abraded, and osseous deposits had taken place near the bicipital groove, and around the margin of the head of the bone. The acromion was thinner than natural, excavated upon its inferior surface, and at a distance of half an inch from its anterior extremity, divided into two portions, which were only connected to each other by the fibrous structure which invests the upper surface of the process.

In the case of Charles Mailly, recorded by Mr. Adams, the partial displacement of the head of the humerus upwards, with dislocation of the tendon of the biceps inwards, was found in *both* shoulder-joints.

Sir Philip Crampton has lately informed me that he has had under his care, for a considerable period, a patient labouring under this chronic rheumatic disease of the shoulder: he has watched the case from its commencement, before there was any deformity of the articulation, and has been able to observe the gradual elevation of the head of the humerus, the summit of which is now placed above the level of the acromion.

In 1849 a dissertation was published by Mr. Callaway upon "Dislocations and Fractures of the Clavicle and Shoulder-joint," being the Jacksonian Prize Essay for the year 1846. In this work, a separate chapter is devoted to the consideration of injuries of the long tendon of the biceps muscle, in which the author notices the different cases to which I have referred, but looks upon them as examples either of rupture or dislocation of the tendon, produced by external injury. As I have already expressed my opinion respecting these cases, it is unnecessary to allude particularly to Mr. Callaway's observations; it is, however, to be regretted, that in a treatise otherwise meritorious, so erroneous a view should have been adopted with regard to the nature of the morbid appearances in the instances in question.

The remarkable elevation of the head of the humerus, to which the name of "partial luxation upwards" has been given, has invariably been ascribed to the destruction or displacement of the tendon of the biceps, not only by those who look upon it as the result of external injury, but also by those who, in my opinion correctly, refer it to the effects of chronic rheumatic arthritis. Mr. Adams, for instance, observes that "the effects of the loss of the tendon of the biceps are such, that the head of the humerus is at once elevated by the deltoid, and kept habi-

tually pressed up against the under surface of the acromion." Mr. Canton, also, in his description of a case of this disease, which he brought under the notice of the Westminster Medical Society, and in which the tendon was divided into four or five slips, remarks, that "this condition of the tendon had permitted the head of the humerus to shift upwards, and thereby to articulate with the under part of the acromion process"[a].

The correctness of this opinion certainly admits of being questioned, and I am inclined to believe that in the cases under consideration, the cause has been mistaken for the effect. I do not mean to say that the accidental rupture or displacement of the tendon of the biceps in a healthy shoulder-joint would not be followed by the elevation of the head of the humerus, but I suspect that in cases of partial luxation upwards, resulting from the rheumatic disease in question, the sequence of events is different from that described by authors.

I believe that in these cases, the elevation of the head of the humerus occurs at a comparatively early period of the disease, and is a gradual process, and that the displacement is not in any instance sudden, as might be expected to happen were it consequent upon the rupture or dislocation of the tendon. It is difficult to say in what it originates, but it is probably to be ascribed to the spastic contraction of the muscles, and their increased irritability under the influence of the rheumatic inflammation.

From the moment when the shoulders (from the cause which I have suggested) begin to be elevated, the tendon of the biceps is put upon the stretch, and pressed against by the head of the humerus, which unceasingly tends to pass still further upwards. When the latter has come into contact with the under surfaces of the acromion, and coraco-acromial arch, the effects of compression, as far as the tendon is concerned, have then reached their utmost limits. In the earlier periods of such cases, the tendon will be found in one or other of two conditions, either displaced from its natural situation, and running over the inner instead of the upper surface of the head of the humerus, or else maintaining its normal position, but presenting alterations of form and structure, which will be found to vary, according to the length of time during which it has been subjected to pressure. At first it becomes flattened and increased in breadth, but at a later period its fibres are separated from one another, and its under surface acquires a corroded appearance[b]. The process of absorption goes on throughout the

[a] London Medical Gazette, 1849, vol. viii. p. 958. [b] See Plate I. Fig. 5.

whole extent of the compressed portion, until at length a complete solution of continuity takes place; and should an opportunity of examining the interior of the joint be afforded at this period, the lower extremity of the tendon will be found to have become adherent either to the capsular ligament or to the bicipital groove, or perhaps to both, while the upper will be seen hanging loose in the articulation. At a still later period, the whole of this superior fragment, in almost every instance, totally disappears.

The displacement of the intra-articular portion of the tendon from its normal course, I believe to be simply owing to its having glided downwards over the globular head of the humerus, to escape, as it were, from the gradually increasing pressure exercised upon it by that process; and I am further of opinion, that when it occurs at all, it happens at a comparatively early period of the disease, and while the head of the humerus still presents a smooth, cartilaginous surface. There is nothing more easy to comprehend than that the undue elevation of this polished ball should cause the equally smooth tendon to glide from its summit. When it has once attained its new position upon the inner surface of the head of the bone, it to a certain extent ceases to be overstretched, and the effects of pressure are but slightly experienced; hence it is that the tendon, thus displaced, may be found in a state of integrity even in cases where the consequences of the long-continued pressure of the head of the humerus upon the other structures of the articulation, and upon the contiguous textures, are seen carried to the utmost.

In the advanced stages of this remarkable affection, should the tendon still continue perfect, the displacement may implicate that portion which, in the normal state, is extra-capsular, but which, in consequence of the singular changes induced by the disease, has now become intra-articular. In such cases the tubercles will be found amalgamated with the head of the bone; the sulcus which here marks the anatomical neck of the humerus being obliterated; the corresponding attachments of the capsule destroyed; and the summit of the bicipital groove filled up. The tubercles and head of the humerus thus become one large articular surface, and the displaced tendon, unless it has become disintegrated, will generally be found crossing that portion of it which corresponds to the lesser tubercle.

That the doctrine which ascribes the elevation of the head of the humerus to the previous loss of the tendon of the biceps is erroneous, or at all events not universally true, appears from the fact, that this partial displacement upwards has been often

observed in cases where, after death, the tendon was found occupying its natural position, and without any solution of continuity. In the case to which Plate III. refers, the patient laboured under the disease in both shoulder-joints for several years before her death, but the affection had been established in the right articulation long before the left was attacked. Upon each side, the head of the humerus had become prominent and elevated much above its natural position.

When the deltoid muscle was removed upon the left side, the capsule was found to be entire, with the exception of a small aperture, corresponding to the insertion of the supraspinatus muscle, the tendon of which was unravelled in its texture, and evidently undergoing that peculiar alteration which precedes the loss of its attachment to the bone. The head of the humerus (with the intervention of the capsule) was pressed closely against the under surface of the acromion, which process, about three-quarters of an inch from its extremity, was divided into two portions, separated fully half an inch from each other, the fibrous structure which connected their upper surfaces having suffered a corresponding amount of elongation. The detached portion, along with the extremity of the clavicle, was also pushed upwards above the level of the remainder of the process. There was no complete solution of continuity in the tendon of the biceps; it still adhered above to the glenoid ligament, but it was greatly on the stretch, and its inferior surface[a], throughout the greater part of the intra-articular division of its course, presented a corroded appearance, and its fibres were unravelled and separated from one another. It was not displaced: it crossed the summit of the humerus in the usual situation and direction.

It is manifest that here, at all events, the displacement of the head of the humerus upwards upon the left side was not due to any cause having reference to external violence, for there was neither rupture nor luxation of the tendon, nor laceration of the capsular ligament.

In the opposite shoulder[b] the disease was further advanced, and the elevation of the head of the bone more remarkable. When the capsule was exposed, it was found to have acquired several abnormal adhesions. Its normal attachment to the superior part of the glenoid cavity seemed to have been transferred, as it were, to the acromion, clavicle, and coracoid process, and to have become identified with the coraco-acromial ligament, which could no longer be distinguished as

[a] See Plate 1. Fig. 5.

[b] See Plate III.

such. The capsule was thin and atrophied, and in many places as translucent as if it had been composed merely of synovial membrane. It was distended by a viscid synovial fluid, and its interior presented some very remarkable appearances. Besides numerous clusters of exceedingly vascular fimbriæ, suspended by delicate pedicles from its inferior portion, vast numbers of tendinous-looking fibres were seen converging towards the tubercles of the humerus; upon close examination they were found to be those of the tendons of the capsular muscles, separated from one another, flattened and expanded. They terminated at different distances from the tubercles, and there existed no vestige of the insertion of any of the capsular muscles into these processes, which had become articular. In the upper part of this abnormal capsule there were several thin, concave plates of bone, the under surfaces of which were in contact with the head of the humerus, and resembled polished ivory. The tendon of the biceps was adherent to the lower part of the bicipital groove, and to the adjoining portions of the capsular ligament, the entire of its intra-articular portion having disappeared.

It was, however, in the osseous fabric of the joint that the most singular deviations from the normal state were observed. About three-quarters of an inch of the extremity of the acromion had altogether disappeared, and a broad, thick, concave plate of bone passed downwards from the shortened process, and became perfectly continuous with the upper and outer part of the margin of the glenoid cavity, which thus appeared as if a coracoid process had sprung from its external side. The acromial extremity of the clavicle was enlarged, excavated upon its under surface, and polished by the attrition of the head of the humerus; it was distant from the acromion fully three-quarters of an inch, but connected to it by an exceedingly dense fibrous tissue, which constituted the highest part of the capsule. The superior part of the enlarged glenoid cavity presented an enamelled surface, but its inferior portion was still covered by the cartilage of incrustation. There was no trace of the glenoid ligament. The head of the humerus was enlarged, irregular in form, destitute of cartilage, and polished, and the tubercles, which were studded with osseous granules, had become continuous with its articular surface, and also with each other, the commencement of the bicipital groove having been obliterated. This specimen furnishes the only example I have ever seen of the formation of an osseous plate connecting the glenoid cavity with the acromion, but there is a preparation, somewhat similar in other respects, contained in the Mu-

seum of the Royal College of Surgeons in Ireland[a]. Although the circumstance has not been alluded to by the author of the Catalogue, yet we have the authority of Mr. Adams for stating that in this instance, "the acromial end of the clavicle is unsupported, and that the acromion process has been removed for the amount of an inch in extent"[b].

In the case which I have described above, I think it highly probable that the removal by absorption of the extremity of the acromion upon the right side had been preceded by the solution of continuity of that process, so often seen in this rheumatic disease, and which actually existed in the opposite shoulder; and I have been influenced in forming this opinion, not so much by the fact of this lesion of the bone being so often symmetrical, as by the circumstance, that the length of the spine of the right scapula, measured to the end of the shortened acromion, was precisely equal to that of the left, measured to the situation of that remarkable lesion which has been in so many instances mistaken for fracture caused by external violence.

I may here observe, that in cases of displacement of the head of the humerus upwards resulting from the disease under consideration, the lower portion of the glenoid cavity is frequently found covered by its cartilage, the ivory deposit existing above; and that the vertical extent of surface thus invested by cartilage may be taken as a measure of the amount of displacement.

Among all the numerous and varied phenomena which occur during the progress of chronic rheumatic arthritis of the shoulder, there is none more remarkable, nor one for which it is more difficult to offer any satisfactory explanation, than the detachment of the extremity of the acromion process. It is most frequently to be noticed in the advanced stages of the disease, but I have more than once seen it at a period prior to the destruction of the tendon of the biceps; it is in many instances symmetrical, and in general occurs where in early life the epiphysis joined the remainder of the process. I have, however, in one instance found the entire of the acromion thus separated from the spine of the scapula. It may co-exist either with hypertrophy or atrophy of the acromion; it may occur with or without perforation of the capsular ligament; or with absorption in some instances, and displacement in others,

[a] Catalogue, vol. ii. p. 397, E. b. 901.

[b] *Loc. cit.* p. 588. See also Cruveilhier, liv. ix.

of the tendon of the biceps, or finally in cases where the tendon is perfect as to structure and normal as to position.

"In many cases," says Mr. Adams, "in which the shoulder-joint has long been the seat of this chronic disease, the acromion process has been found traversed in the line of junction of its epiphysis, by a complete interruption of its continuity, as if fractured; we say, as if fractured, for we are convinced that this solution of continuity of the acromion process is not really a fracture produced by external violence, but a lesion, which so frequently exists in combination with chronic rheumatic arthitis of the shoulder, that we are compelled to look upon it, in these cases, as a peculiar organic change, the result of chronic rheumatic disease. We do not pretend to account for the separation of the acromion process into two portions, nor can we say why it is that the division usually occurs in the original line of the epiphysis, particularly at the late period of life at which we generally witness this phenomenon. In some of these cases we have found the acromion in a state of hypertrophy; in others in a state of atrophy; but in no case did there seem to be any attempt at ossific deposition on the contiguous surfaces of the separated portions of the acromion, a circumstance which might be expected if a fracture had occurred"[a].

By those who have not made the subject of chronic rheumatic arthritis a special object of their study, it might be supposed that the singular solution of continuity of the osseous tissue, such as that to which I have been alluding, was only to be met with in the acromion process. This, however, is far from being the case, for I have seen half of an hypertrophied olecranon thus separated from the shaft of the ulna, in an aggravated case of this disease affecting the elbow-joint, and in several instances of chronic rheumatic arthritis engaging the articulation of the knee, which are preserved in the Museum of the Richmond Hospital, large portions of the condyles and head of the tibia may be seen separated from the remainder of the bone. In one of these examples the detached mass is of such a size as to embrace the insertion of the ligament of the patella.

Independently of the absence of ossific deposit, or of any attempt at reparation, there are two remarkable circumstances to be observed in these cases, namely, that the detached portion is never at once separated from the rest of the process, what-

[a] *Loc. cit.* p. 587.

ever may be the particular bone concerned; nor is the fibrous tissue investing the external or subcutaneous surface of the process ever torn: conditions which might be expected to be present (in the case of the olecranon at all events), if the phenomenon in question was the result of external violence. On the contrary, the two portions remain in contact, frequently so close and perfect that a careful examination may be required before the exact seat of the interruption of continuity can be discovered; and hence it has several times occurred to me to find this *apparent* fracture of the acromion, in specimens of this rheumatic affection of the shoulder, preserved in different museums: although in the printed description of such no mention had been made of anything abnormal in the condition of that process.

It should also be recollected, that when the acromion is broken by external violence, the shoulder droops, and the detached portion of the process sinks along with it, but when the solution of continuity is the result of the disease in question, a precisely opposite condition is frequently observed, the separated portion being pushed by the elevated head of the humerus above the level of the rest of the process.

It is true that, at a period more or less remote, the detached portion may become widely separated from the rest of the acromion[a], but this has been gradually accomplished by the continued pressure of the head of the humerus, stretching and elongating the fibrous structure, which naturally invests the superior surface of the process.

It would appear from the analytical investigations conducted by Mr. Harper, and recorded by Mr. Canton, that in this rheumatic disease of the shoulder a large proportion of the earthy matter naturally existing in the bone is removed; but I scarcely deem the knowledge of this fact adequate, of itself, to account for the solution of continuity in the acromion; and it appears to me that, in our endeavours to explain this remarkable phenomenon, we can at present only go so far as to suppose that, under the influence of this specific arthritic inflammation, the intimate structure of the bones undergoes some peculiar molecular alteration, the exact nature of which is as yet hidden from us, but the effects of which are to diminish its cohesive power, and to render it liable to yield to a pressure, which, though perhaps not powerful, is unceasingly exerted upon it. In many of these cases I have found the affected bones soft, porous, and spongy: these conditions in some instances co-ex-

[a] See Plate II.

isting with increase of volume, constituting that state of the osseous tissue which Lobstein has described under the title of "Osteoporosis"[a].

A long and careful consideration of the subjects discussed in the preceding pages leads me to believe, that the occurrence of partial dislocation of the head of the humerus upwards, as an immediate result of rupture or displacement of the tendon of the biceps muscle from accidental violence, has not been anatomically demonstrated; that all the cases accompanied by dissections, that have hitherto been published, as examples of the luxation in question, resulting from injuries to the tendon, have, in reality, been instances of the effects of chronic rheumatic arthritis; and that the morbid conditions, which in them have been regarded as affording the clearest evidence of the joint, having at some former period suffered from external violence, are among the most constant effects of this disease. "Notwithstanding all these lesions, namely, the total disappearance of the articular part of the tendon of the biceps; the perforation of the superior part of the capsular ligament by the head of humerus and the separation into two portions of the acromion process,—we feel convinced that all these phenomnea combined should by no means be considered as proof of any accident having occurred to produce them; but, on the contrary, should be looked upon as the usual results of chronic rheumatic arthritis of the shoulder"[b].

Art. XV.—*Reports of Rare Cases observed in the Clinical Wards of the Whitworth and Hardwicke Hospitals.* By Samuel Gordon, M.B., F.R.C.S.I., M.R.I.A., Physician to the Hospitals.

I.—*Internal Strangulation of the Small Intestine, produced by a diverticulum of the Ilium, which had become adherent to the Anterior Wall of the Abdomen; Peritonitis; Death.*

As long as the question remains undetermined as to the propriety of the operation of gastrotomy in cases of internal strangulation of any portion of the intestinal canal, or of its peritoneal appendages, the record of any such case which has been closely observed must be considered more or less valuable. With this view I am induced to publish the follow-

[a] Traité d' Anatomie Pathologique, tom. ii.
[b] Cyclopædia of Anatomy, *loc. cit.*

ing:—A labourer, a remarkably powerful, tall, muscular man, forty-six years of age, was admitted into the Whitworth Hospital, on the 20th of February, 1853. It was scarcely necessary to ask a question, or to make any manual examination, in order to be satisfied that he was labouring under peritoneal inflammation, so peculiar was his position and his aspect. He lay on his back, with his knees drawn up, and his head and shoulders very slightly raised. His face had a livid pallor; his features remarkably collapsed, but expressive of great anxiety; his eyes sunken and dull, surrounded with a marked bluish circle; the intellectual and sensorial faculties perfect. His pulse was very rapid, 132, exceedingly small and compressible; his hands cold and blue. The abdomen was remarkably tense and resisting; all the lower part had a peculiar doughy feel, but without any sense of fluctuation anywhere; the upper part was loudly tympanitic. As he lay quiet, he had no pain even on manipulation, unless deep pressure was made; it was then confined entirely to the right iliac region and to the umbilicus, and described as a dragging sensation rather than pain. This was, however, much increased by any movement, and he showed the greatest disinclination to the slightest effort. He followed with his eyes, without the least motion of his head, all our movements around his bed, and disliked even to raise his arm, to allow of the radial pulse being examined.

In addition to the above symptoms, he had obstinate constipation of the bowels, and constant vomiting of yellow fœcal matter. He had also an incessant desire to go to stool, with tenesmus, but could not succeed in voiding anything.

The history which he gave of his illness was, that he was working until the 14th, one week before his admission. His bowels were freely moved on the 13th, but were not moved on the 14th, on which night he was attacked with pain in the abdomen, not, however, very severe, nor attended with collapse or nausea, but he felt a gradual swelling or increasing sense of fulness spreading through the abdomen. On the 16th he was attacked with vomiting, which, he says, was at first excessively bitter; and on the following night assumed the characters it had on his admission. It was then of a yellow colour, of a distinctly feculent odour, and of a most disgusting taste. Seven days had now elapsed without any evacuation having taken place *per anum*, except, as his brother described it, like the droppings of a hare.

With the above collection of symptoms and such history, although the tongue was clean and moist, and he was passing

urine rather abundantly, there was but little doubt that we had to deal with a peritoneal inflammation, which was consequent on an interruption of the intestinal canal, from intus-susception or other internal cause, there being no external tumour or other evidence of hernia.

I was at once forcibly reminded of the cases collected by Mr. Phillips, and published by him in the Medico-Chirurgical Transactions, and of others in which gastrotomy is so strongly recommended; but however anxious I might have been to open the cavity of the abdomen and remove the obstruction, the collapsed condition of the patient, the extreme weakness and intermission of the pulse, but above all, the great coldness of the skin, did not, I considered, warrant any surgical interference; I therefore directed my principal line of treatment towards the peritoneal inflammation, and ordered him a drachm of calomel and a grain of opium, to be divided into sixteen pills, one to be given every two hours, and the other usual means for bringing the system rapidly under the influence of mercury to be employed. The abdomen to be constantly fomented with warm and stimulating fomentations, and the tenesmus to be obviated by occasional enemata of warm water. The system to be supported by small doses of warm wine and water.

The following day he seemed rather better. The vomiting was relieved; the pain, on pressure over the abdomen, was not increased: his brother, who remained constantly with him, said that he had passed from his bowels "a soft substance like a piece of gut." This substance, unfortunately, I could not see; nor could I, nor my resident pupil, Mr. Kidd, although we made every exertion, obtain any clear account of it, and I am now satisfied there must have been some mistake in the matter. It was sufficient, however, at the time to modify, in a measure, both the prognosis and diagnosis; for while hitherto the symptoms which existed, coupled with absence of diarrhœa, or any discharge of blood or mucus *per anum*, indicated, in my opinion, rather internal strangulation of some portion of the intestine, and so rendered the prognosis most unfavourable—(there being, I believe, no case of recovery under such circumstances recorded in the annals of medicine, unless the constriction were removed);—the discharge of such a substance as described would, under the circumstances, have been rather a favourable symptom, reminding us of the preparation placed by Sir A. Cooper in Guy's Hospital Museum, and in which, in a case of intus-susception of the small intestines, coagulable lymph was effused, which had formed an accurate mould of the intestine;

and also of Baillie's case, and many others, in which the invaginated portion had sloughed away and left the canal of the intestine pervious as before, its length only being reduced by the part which had been separated. The only complaint which he made on this day was of tightness of his chest and difficulty of breathing,—of this he was complaining more or less since his admission. The vomiting or gulping up of fluid in large quantities was not so continuous. This remarkable remission of the symptoms, which Rokitansky dwells on as part of the history of this affection, was not of long continuance, for he died not many hours after the morning visit.

Post-mortem.—On opening the cavity of the abdomen the very great distention of part of the small intestine was most remarkable,—it was also exceedingly vascular, presenting a most beautifully arborescent appearance; on turning aside this distended portion, and examining the right iliac fossa, we found, lying deep in it, another portion of small intestine perfectly collapsed, and forming a very remarkable contrast with the distended portion by its greatly reduced caliber, being not thicker than the intestine of an infant. This portion was of various shades of colour, from dark purple to a light red. There was no soft lymph or purulent matter in the cavity of the peritoneum; the anatomical evidences of peritonitis were confined to the vascularity of the serous membrane, which was, in some parts, so intense as to seem almost gangrenous; there was also remarkable dryness of the serous membrane, which had in several places a punctated appearance; the intestines were, in some places, very slightly agglutinated, and when they were separated the peritoneum appeared to be somewhat thickened along the line of adhesion. A large portion of small intestine was found strangulated by a diverticulum, the course of which it will be advisable to trace in order to explain the nature of the strangulation. It came off from the ileum about eighteen inches from the cæcum, exactly opposite to the attachment of the mesentery, being at its commencement large enough to admit the middle finger; it immediately turned over the ileum, and, first passing in front of a large loop, or double fold of intestine and corresponding mesentery, completely encircled it near its junction with the cæcum, appearing, however, to press much more on the mesentery than on the intestine; it then again crossed the ileum, and after closely constricting it, about five inches from where the diverticulum itself was given off, passed upwards and forwards, to be firmly united by strong bands of organized membrane to the anterior wall of the abdo-

men, about the junction of the right iliac and hypogastric regions. Thus it twice passed over the front of the mesentery, forming three strictures; the first two points of stricture included about five inches of intestine; one of these two points was not complete, for the diverticulum, coming off from the side of the ileum, and passing in front of it (where the line of pressure was well marked by the greatly thickened peritoneum), the posterior wall was almost completely free; consequently this portion of intestine, although reduced in caliber, and of a dark colour, did not present appearances of constriction in the same degree as the succeeding portion, which, as was said above, was not larger than the intestine of an infant, was of a very dark colour, which became at each point of stricture,—but more particularly at the lower, or that near the valve,—a rich purple. On opening this portion of intestine it was found to contain only mucus; the internal coat was greatly congested, and close to the valve the colour was almost as deep as that of the serous membrane. The diverticulum, seven inches and a half long, was greatly narrowed in the centre, where it appeared like a fibrous cord passing round the intestine; at its termination it again became considerably dilated; it contained only mucus. The mucous membrane of the stomach was softened, and presented several minute bloody spots; it contained a large quantity of thin slimy mucus. The distended portion of small intestine contained a great quantity of yellow fœcal matter, exactly similar to what had been so frequently vomited during life. The collapsed portion was perfectly empty. The large intestine was greatly reduced in size, and contained a small quantity of hard scybalæ.

I examined the contents of the thorax to seek for some cause for the great dyspnœa, beyond the pressure upwards of the diaphragm, which the distended abdomen gave rise to, and I found that both lungs presented a well-marked example of interlobular emphysema. That this emphysema was not chronic, but was in some way the effect or concomitant of the intestinal strangulation, I conjectured from the fact, that although the emphysema was extreme, neither the mucous membrane nor any other portion of the bronchial tubes had undergone any alteration, but was perfectly healthy.

Strangulation of a portion of the intestinal canal by means of a diverticulum—although the rarest form of internal strangulation—has been met with not unfrequently; it may occur with the end of the diverticulum remaining free, of which there is a remarkable example in the Museum of the College of Sur-

geons, presented by Dr. Cusack[a]; or with the inferior extremity forming an attachment to some portion of the peritoneum, as in the present instance, and in similar cases recorded by Rayer[b], Hutton[c], and others.

This patient appears to have died rather of nervous exhaustion than from either peritonitis or gangrene of the intestine: although the intestine was of a very dark colour, it was not much softened or very readily torn, as is the case in gangrene; and the amount of peritoneal inflammation was very limited. It is generally considered that the rapidity of such cases is in proportion to the narrowness of the stricture: the great muscular strength and previous rude health of this patient may have been the reason why he survived for ten days with two points of the small intestine so compressed as to prevent even the passage of air through either of them.

The amount of peritoneal inflammation, however, does not appear to be in any way connected with the condition of the stricture. We are not, I think, as yet aware of the causes why the amount and nature of the peritoneal inflammation should be so variable in case of strangulation of portions of the intestinal canal—our knowledge is at least of a negative kind. It certainly does not depend on the duration of the disease. We know that death sometimes occurs, and the peritoneum presents no appearances of inflammation. In 1848, Dr. Montgomery exhibited to the Pathological Society a specimen of intus-susception in a child, in which "upon an examination of the parts after death he could not discover the slightest appearance of any inflammation having existed," although decided symptoms of internal strangulation had been present for three days. In a case of intus-susception which was exhibited to the London Pathological Society by Dr. O. Ward, and from which the patient died on the seventh day, "the peritoneum did not appear to have been inflamed."

On the other hand, however, we read that "the small intestines were much inflamed, and matted together by moderately firm lymph, in a case of internal strangulation which died on the sixth day[d]; and in Dr. Cusack's case, already referred to, although death took place in less than forty-eight hours from the commencement of the attack, there was lymph and

[a] Catalogue of the Museum of the Royal College of Surgeons of Ireland, vol. ii. p. 71.

[b] Archives Générales de Médecine, tom. v. p. 68.

[c] Dublin Pathological Reports, vol. ii. p. 32.

[d] Dr. Peacock, London Pathological Transactions, vol. i. p. 97.

even purulent matter effused into the cavity of the peritoneum[a].

Neither does the amount of peritoneal inflammation depend upon the age or strength of the patient; we often find the greatest amount of inflammation in the weakest person, and in the present instance we see, in a powerfully strong man after ten days' illness, at least great want of the usual appearances of peritonitis.

Although the peritoneal inflammation in general commences at the stricture, and spreads from thence through the remainder of the abdomen, we sometimes find, that while we have in the exudation of lymph, and even purulent matter, evidences of most acute inflammation through the remainder of the peritoneal cavity, these appearances are completely wanting around the stricture, where altogether a different kind of action is progressing. This was very well marked in a preparation placed by Professor Harrison in the College of Surgeons Museum[b]; and in others which I have witnessed, and in the present instance, there was no appearance whatever of lymphy exudation near the stricture, while two coils of the distended intestine were evidently about to be united.

II.—*Plastic Bronchitis of the small Bronchial Tubes, with effusion of Lymph into the Air-Cells of the Lung.*

The disease known as *plastic bronchitis*, or *pseudo-membranous bronchitis*, in what we may term its sthenic form, and affecting principally the larger bronchial tubes, has been very fully described, at least as far as its general symptoms and anatomical appearances are concerned; nor are we altogether without information on the more asthenic form of the disease affecting also the more minute bronchial tubes, and passing even into the terminal vesicles of the lungs. We find this form noticed by Dr. Stokes, in the year 1833; it has been also observed by Louis, Reynaud, and others, and appears to have prevailed in Paris as an epidemic in the year 1837, of which Caseaux and Nonat have left an interesting account. I have lately met with some cases of this affection in the Whitworth and Hardwicke Hospitals, and as I feel we still require information on several points connected with so formidable a disease, I have thought that the details of a few of them might not be without interest.

[a] Although this does not appear in the Catalogue, yet I make this statement on the authority of Dr. Fleming and others, who were present at the examination, which at the time created great interest.

[b] Catalogue Museum Royal College of Surgeons of Ireland, vol. ii. p. 75.

Case I.—A waiter from Gresham's Hotel, who had long been under observation for cirrhosis of the right lung, was admitted into hospital, on the 14th of January, with anasarca and albuminous urine; his symptoms were considerably alleviated, and he was about to be discharged, when, on the 9th of February, he complained of pain and sense of heat, and fulness in the left side of the chest; loud, sonorous, and sibilous *râles* were audible over the upper half of this side; the phenomena which always existed in the right side were unaltered; his cough was much increased; the expectoration greatly diminished; his skin was very hot, and the pulse frequent. On the same evening he was seized with intense pain in the left side, which was followed by great collapse, from which he never perfectly rallied. On the next morning the pain in the side and collapse still continued, and, though his breathing was most rapid and short, he was pale, and his lips blanched; nor had he the appearance of one suffering from pulmonary obstruction. However, where the evidences of bronchitis existed in the upper half of the left lung, there was now extreme dulness on percussion, and very slight bronchial breathing, no vesicular respiration, and a peculiar modification of resonance of the voice, approaching rather to œgophony than bronchophony. He died during the day. A post-mortem examination revealed the existence of a cavity in the right lung, formed by a dilated bronchial tube, and other evidences of cirrhosis, of which a more detailed account will be given on another occasion. The upper lobe of the left lung was greatly enlarged, and did not in the least collapse; it was perfectly solid, and deeply indented with the marks of the ribs. It was of a grey colour externally; a section of it also showed a grey granite-like appearance; it was remarkably heavy, and immediately sank in water; it was also very tough, not at all friable, nor easily broken; on pressure neither pus, blood, nor mucus, exuded from the surface, but very small particles of lymph protruded from several points, which were the orifices of divided bronchial tubes. These latter were found completely filled with soft, plastic lymph. This effusion was confined altogether to the left lung; it did not exist in the larynx or trachea, or near the root of the bronchial tree, it commenced about the fourth subdivision of the bronchi, was rather loose, and did not completely close up the caliber of the tubes at first, but soon became very adherent, completely filled the bronchial tube, and was traced into the terminal vesicles, from which it could be picked out; with some trouble the lymph could be extracted in large quantity, and preserved its arborescent appearance; the intimate con-

nexion between the lymph in the air vesicles of the lung, and in the adjoining bronchial tube, could be easily demonstrated. When the lymph, which was perfectly solid, was removed, the mucous membrane of the bronchial tube was found of a dark blue colour, and greatly congested; the disease was confined to the upper lobe of the left lung; the pleura was not inflamed.

Case II.—John Fahey, aged 28, was admitted into the Hardwicke Hospital on the 24th of February, 1853. He was of intemperate habits, and, after being exposed to wet and cold, was suddenly seized, on the previous day, with intense pain and stitch in the upper part of the right side; he immediately became so weak that he fainted. His face was exceedingly pale, and his features collapsed; his breathing exceedingly short and hurried; pulse 116, very feeble; still complained of pain in the right side, the upper half of which was perfectly dull on percussion, and there was no vesicular respiration audible; there was considerable resonance of the voice, and, on deep inspiration, some bronchial respiration was audible; physical phenomena same anteriorly and posteriorly; respiration in left lung and lower half of right natural; he had cough, which was almost incessant, but without any expectoration; his skin was intensely hot; six leeches were applied to the right side, and he was ordered to take, every third hour, a pill containing two grains each of blue pill and carbonate of ammonia, and a fourth of a grain of ipecacuanha, and to have twelve ounces of wine. The constitutional symptoms improved greatly; the pulse became much stronger, so that the wine was omitted, but the phenomena in the lung remained unaltered. On the 27th he was again seized with great faintness, and, although stimulants were again freely administered, he never rallied, but died early on the following morning. The upper lobes of the right lung were found, on post-mortem examination, to be perfectly solid, and greatly enlarged, encroaching much on the anterior mediastinum. A section of these lobes showed the air vesicles completely filled with lymph, which could be easily extracted, exhibiting an exact mould of the air vesicles. The small-sized bronchial tubes were also completely filled with the same soft, tenacious lymph, which, as it passed into the larger bronchial tubes, became less tenacious, and encroached less on their caliber. The bronchial mucous membrane was inflamed throughout, but the effusion of lymph was confined to the upper lobes of the left lung. There was no pleuritis.

Case III.—Cusack, a policeman, was admitted into the Hardwicke Hospital, on the 2nd of March; he had been ailing for some days, when he was suddenly seized with great pain in

the right side, and intense dyspnœa. I saw him a few hours after: he had all the appearance of a man suffering from the sudden supervention of pneumothorax; he held his hands on his right side, and kept his body inclined towards it. He was very pale, and complained of great sudden weakness. He could not be induced to draw his breath, so as to allow of auscultation being practised; the lower two-thirds of the right side were quite dull on percussion; it was to this part he referred the pain. The right side was fomented with warm turpentine, and he was ordered a pill every three hours, containing a grain and a half of blue pill, two grains of carbonate of ammonia, and a fourth of a grain each of ipecacuanha and opium, and to have sixteen ounces of wine.

4th. The great pain was relieved, but the pallor and collapse continued; cough incessant; expectorated only frothy mucus. Corresponding to the extent of dulness, which was extreme, there was slight bronchial respiration, and slight bronchophony; the bronchial breathing was heard only on very deep inspiration. The right side was blistered, and the blisters dressed with mercurial ointment, which was also administered by inunction. This plan of treatment was continued until the 7th, when his gums were sore. This was almost immediately followed by copious expectoration, which was of a very peculiar character: it was in consistence and appearance like grains of boiled rice, but most of the particles much smaller, and with this there was also a considerable quantity of mucus. The dulness on percussion still continued, but there was now to be heard in several spots a peculiar flapping valvular sound, which I at once recognised as the *bruit de soupape* observed by Barth and Caseaux. This continued for several days. It frequently happened, that on first examining the patient, it was not audible, but after a fit of coughing, it was always produced and continued; it was audible both in inspiration and expiration. When at length, after six days, this sound disappeared, it was replaced by the sonorous râle. This man recovered perfectly, and was discharged cured March 29th. After the system was affected with mercury, the treatment adopted was expectorants and counter-irritation, and the free administration of wine was continued.

Case IV.—Butler, a policeman, was on duty on Arranquay, on the night of the 23rd of March, when he was suddenly seized with intense pain in the left side of the chest; this was followed by profuse perspiration, and then great debility. He was obliged immediately to go off duty, and was admitted into the Hardwicke Hospital on the following day.

I saw him on the morning of the 25th. He had the appearance of a man suffering from severe hemorrhage; his face was very pale and anxious, and his lips blanched; his dyspnœa was very great; the pain in the left side very severe. The heart was displaced upwards, and to the right side. The lower two-thirds of the left side of the chest were very dull, both anteriorly and posteriorly; there was no respiratory murmur audible over this space; the vocal resonance was increased; in the upper third the respiratory murmur was natural, as was also the percussion sound. This man had also most tiresome cough, and total want of expectoration, until the 29th, when the gums were touched with mercury; he then began to expectorate in very large quantity. On pouring out this expectoration, and pressing it between folds of bibulous paper, the more fluid parts were absorbed, and we were able to demonstrate large masses of lymph, which still remain a most accurate mould of the minute bronchial tubes, and are preserved in their arborescent form. This man is still (April 11) in hospital, recovering but slowly. The anemic appearance and debility continue, although he takes sixteen ounces of wine daily. The dulness on percussion continues, and the *bruit de soupape*, or double flapping sound, is very plain, and is always rendered more evident by coughing.

These cases are all remarkable for the extreme suddenness of the attack, and the violent pain and collapse with which the symptoms set in. I have never seen a pneumothorax or perforation of the stomach announced with more formidable symptoms than those which existed in Price's case, and the rapidity with which the disease runs its entire course is most alarming. I can positively assert that in one case it did not not exceed forty-eight hours; and I imagine that unless the disease can be brought under control within that period, it generally proves fatal. The symptoms seem to be—very great and very sudden oppression of breathing; little pain after the first acute attack, but great sense of weight on the chest; severe harassing cough, and little or no expectoration.

In some cases the ordinary physical signs of bronchitis appear to have existed for some time before those of solidification of the lung; but in others the extreme dulness on percussion appears to have supervened without any previous evidence of bronchitis. This dulness on percussion was always accompanied by total absence of respiration, or very weak bronchial respiration and a modified bronchophony, differing thus widely from the phenomena of the ordinary or even typhoid pneumonia.

I consider the disease to be essentially a morbid product of the bronchial mucous membrane; but that it is connected with the morbid state of the blood is evident from the fact that it is sometimes combined with that terrible disease known as diffuse inflammation. Dr. Stokes has told me of a case of this kind which he saw prove fatal in less than forty-eight hours, about the end of December last; and also that the severity of the symptoms did not appear to bear any proportion to the amount of disease, death having occurred when not more than a third of one lung was affected. It differs from bronchitis ordinary and specific, in that it not merely confines itself to one lung, but that it never engages the entire even of that lung. Sometimes it affects the upper, and sometimes the lower portions of the lung. When the upper lobes of the lung are affected, the diagnosis seems to be comparatively easy; but when the inferior lobe is engaged, it is very liable to be mistaken for pleuritis with effusion, not merely from the early history of the disease, commencing with acute pain and stitch in the side, and then the supervention of dulness on percussion, and corresponding absence of respiration, but also from the fact of displacement of the adjoining viscera. This fact, I believe, I was the first, and as yet the only one, to observe. In the year 1840 Dr. Smith made the dissection, and exhibited to the Pathological Society[a] a specimen of this disease. The details of that case during life were furnished to him by me, I being at the time resident clinical clerk in the Whitworth Hospital, in which the man died. The preparation and accurate drawing are still preserved in the valuable collection of the Richmond Hospital Museum. In my notes of the case I find it entered:—"This is most likely a circumscribed empyema; there is evident enlargement of the right side of the chest, and the anterior mediastinum is filled up. The liver is depressed, but there is a distinct line of clearness at the base of the lung, between the effusion above and the liver." That the lung was actually enlarged, and that these displacements had taken place, the post-mortem examination proved. In the autopsies above detailed the anterior mediastinum was filled up, and in the case of Butler the heart was displaced considerably to the right side, and, as the affection went on to recovery, we were able to trace the return of the heart to its normal situation. In the very early and in the later stages the diagnosis may be easy, but at a certain period of this disease, affecting the inferior lobes of the lung, I know of no

[a] See the former Series of this Journal, vol. xix. p. 122.

means of forming a positive diagnosis between it and pleural effusion, except by the test of position, when, if the pelvis be elevated and the shoulders depressed, the fluid will gravitate towards the cone of the pleura, if the dulness and absence of respiration have been caused by its presence, and these signs of compression or solidification of the lung will no longer exist. In the fact of enlargement of the lung in this disease, we are, perhaps, approaching the solution of the long-contested question, whether in pneumonia the lung is really enlarged or not. The only reasonable proof of enlargement of the lung in pneumonia is, the apparent depression said to be caused by the pressure of the ribs, and this appearance can be easily demonstrated to be produced rather by a thickening and consequent elevation of the intercostal portion of the pulmonary pleura; whereas effusion of lymph into the air-cells of the lung is, according to my experience, always accompanied by enlargement of the lung.

Lobstein's account of the anatomical appearances is very graphic, although he considers the disease as a necessary complication of pneumonia having attained its third stage. He says: "If we open the bronchial tubes, beginning at the root and going towards the circumference of the lung, we find them closed up by a yellow substance, solid in the larger branches, and sometimes hollow in the smaller, from which it can be drawn out preserving the shape of the tubes; the bronchial mucous membrane is evidently inflamed. As to the bronchial vesicles, an accurate examination will show that they appear, either to the eye or to the lens, under the form of innumerable granules. When we tear the parenchyma of the lung these same vesicles assume the aspect of innumerable tufts and white elevations." Lobstein adds, that he has also found in connexion with this plastic bronchitis a tumefaction with red softening of the nervous filaments, which accompanies the bronchial ramifications. This latter condition I have not been able to verify. Others, besides Lobstein, have looked upon this disease as pneumonia, and I have no doubt but that it has been frequently mistaken for the typhoid form of pneumonia. It assimilates it only at its commencement, in the extreme suddenness of the attack, and the rapidity with which, in a debilitated constitution, part of the lung becomes solidified; it differs from it in its progress, for while under suitable treatment the lung affected with typhoid pneumonia rapidly resumes its functions, and the physical signs of solidification are, often in forty-eight hours, replaced by healthy vesicular respiration, the progress to recovery in plastic bronchitis is always slow, and the expec-

toration and peculiar *bruit de soupape* are pathognomonic of the disease.

The pathology of the two diseases is totally different, as indeed are also the microscopical appearances. This was demonstrated to the Pathological Society by Dr. Aldridge, in the year 1847, in a case of this kind which was under the care of Dr. Hudson, of Navan. Dr. Aldridge has also examined sections of the lungs in the fatal cases above alluded to, and it appears that in none of them can the exudation masses, observable in ordinary pneumonia, be detected, while all the characteristics of true typhoid matter are present—the very small size of the corpuscles, the great irregularity of their shape, their dotted surface, and the total absence of nuclei.

With regard to the treatment of this formidable affection, I think our chief reliance must be placed in the use of mercury, at least for the ultimate and permanent cure of the disease; while the general symptoms are relieved by the free use of wine and counter-irritation; there was no improvement in the physical signs, in any case, until the gums were affected by mercury; the lymph then became loose and detached, and copious expectoration commenced. The best form in which to administer the mercury is, either in that of blue pill or grey powder, combined with carbonate of ammonia and small doses of ipecacuanha; inunction may also be employed. Frequent and extensive counter-irritation should be adopted by means of hot turpentine and blisters; while, at the same time, wine and nourishment should be freely administered. Nor should its use be lightly or speedily laid aside, for, like any other specific inflammation, this disease has a great tendency to be reproduced after it has once existed, and relapses would appear to be both frequent and sudden.

Art. XVI.—*On the Influence of Vegetations on the Valves of the Heart, in the Production of Secondary Arterial Disease.* By Jolliffe Tufnell, F. R. C. S. I., M. R. I. A., Surgeon to the City of Dublin Hospital; Surgeon to the Dublin District Military Prison, &c. &c.

Attention has been recently drawn by Dr. Senhouse Kirkes, in a communication read before the Royal Medico-Chirurgical Society of London[a] to some of the principal effects resulting from the detachment of fibrinous deposits from the interior of

[a] Medico-Chirurgical Transactions, vol. xxxv.

the heart, and their admixture with the circulating fluid; and also by Dr. Rühle[a] in Virchow's Archiv, to the same subject.

These papers both ably illustrate the dangers attendant upon the presence of warty vegetations of the valves, and point out the sources of peril which cauliflower excrescences, once formed, must ever be, by demonstrating the serious results that may ensue from their detachment, and consequent presence in the circulating blood. They show how their arrest within an arterial canal, if of the head, may lead to direct paralysis and speedy death; or, if in the main artery of an extremity, be productive of gangrene, which, though slower in its consequences, yet ultimately becomes no less fatal to life.

A third form of this secondary influence has recently fallen under my observation, and, connected as it immediately is with the subject of arterial dilatation and aneurismal development, I propose directing attention to the case, and offering a few remarks upon it.

This case I saw, for the first time, on the 7th of January of this year. The individual in whose person it occurred was a young man, twenty-five years of age, of delicate constitution and small make. In August, 1846, after exposure to wet and fatigue in shooting, he complained, on returning home, of pain in different parts of his body, but which was more particularly marked about the ankles and knees. The symptoms were acute; he was unable to rise from his chair from pain in the insertions of the recti muscles, and the ankles were both swollen and tender; sore throat and general symptoms of cynanche accompanied this state; there was some degree of fever, thirst, hot skin, &c. &c.

This state was met by leeches being applied to the inflamed joints, the administration of the warm bath subsequently, followed by Dover's powder and blue pill, with alkaline cathartics.

On the 29th he was convalescent, and was allowed to leave the house, and take walking exercise in the grounds.

On the 2nd September relapse occurred, commencing with transient stiffness, and some uneasiness in the back of the Achillis tendon, followed by swelling of the left wrist. The next day there was a good deal of fever; the night was passed without sleep in consequence of pain; the pulse was 94, and throbbing; the headach considerable; skin hot, and urine depositing a lateritious sediment. Purgatives and colchicum were exhibited; and on the 6th there was a mitigation of the symptoms. It was now, for the first time, ascertained that the pa-

[a] Medical Times and Gazette, March 19th, 1853.

tient had gonorrhœal discharge from the urethra. Balsam and alkalies were, therefore, superadded to the colchicum. On the 14th he was free from all uneasiness. Upon the 20th the discharge from the urethra ceased; and on the 23rd he left the country for London.

From this date he continued in good health up to the month of September, 1852, when he contracted syphilis, and was subjected to the influence of mercury.

In November, after exposure to wet, he complained of pain in the head, shoulders, arms, and ankle-joints, with dyspepsia and gastric irritation. This attack was met by laxatives and diaphoretics, followed by sarsaparilla and hydriodate of potash, in doses of five grains, thrice a day. His recovery was tardy; but by the end of the month he had much improved, and his chest, upon careful examination, yielded no sign of cardiac disease. On the 8th of December, convalescence was interrupted by acute rheumatic symptoms, violent headach, hot, dry skin, and great throbbing of the carotid arteries, especially at night; to these succeeded periodical exudations of profuse sweat, occurring every eight hours: leeches were applied over the region of the heart, and colchicum administered internally. Up to the 16th of December there was no dyspnœa or palpitation. Uneasiness was now, for the first time, complained of in the cardiac region; this was followed by severe pain in the left hypochondrium: bellows murmur was shortly after loudly audible at the base of the heart. From this date the symptoms of cardiac disease began gradually to manifest themselves. There was inability to lie on either the left side or the back; the heart's action became jarring and violent; pulsation was visible in the carotids; the *bruit de soufflet* was loudly heard, not only in the heart, but over the great vessels; the countenance grew pale; the feeling of debility great, and tendency to fainting frequent.

Such had been the history of this patient previously to the evening of the 7th of January, when I first saw him. There was now universal pallor of the skin, conjunctiva, gums, and tongue. There were extreme debility, palpitation, and dyspnœa, accompanied by violent pulsation of the carotid arteries, with headach from throbbing of the cerebral vessels. The pulse was 96, jarring and regurgitant, but quite regular.

Upon examination of the chest dulness on percussion was found over a large space; and to the ear a double bellows murmur was audible, loudest at the middle of the sternum, but distinct over and along the course of the carotids as far as the angles of the jaws; to the bend of the elbows in the upper,

and the groin in the lower extremities. Beyond these points there was no *bruit de soufflet*, but a loud, single thump. The pulse, too, was visible throughout the same extent, at least wherever the arteries were superficial; a *bruit de diable* was also audible over the large veins of the neck. The condition of the patient was now extreme; he sat upright in his chair, speaking only in gasps, each sentence being interrupted by a short cough.

The diagnosis made was, dilatation and hypertrophy of the heart, patency of the aortic valves, with excessive anemia in consequence of deficient nutrition.

Removal of the causes of the latter condition being out of the question, the next object to obtain was an alleviation of its more distressing symptoms, by rest, pure air, nutritious diet, and chalybeates, with opium at night. To fulfil this end, the citrate of iron in two grain doses, in the form of the aqua chalybeata of Bewley, was prescribed three times a day, with half a grain of muriate of morphia in an ounce of Murray's solution of camphor at night. The diet consisted of an egg for breakfast, calves-foot jelly at noon, roast or boiled underdone brown meat at 4, with arrow-root and milk at 7, as little fluid being taken in the twenty-four hours as the patient could limit himself to. Under this treatment he continued to progress very favourably until the evening of the 10th, when, on being visited, he said he was afraid his right leg had become paralyzed, it felt so *heavy*, *dead*, and *cold*, and so full about the knee. Upon examining the extremity, its temperature first attracted notice. It was very low, much below the other. Its colour was a dirty, livid yellow, and the foot and leg were slightly œdematous. The knee was swollen, measuring one inch more in circumference over the patella than the opposite one, the difference caused not by general œdema, or effusion into the joint, but by the presence of a large pulsating tumour in the ham.

On inspection and examination of this tumour, it was found to occupy the lower two-thirds of the popliteal space, sinking down between the heads of the gastrocnemius muscle. It was oval, of the dimensions of a hen's egg, with a lateral diastolic motion of two inches, forcing the forefinger and thumb asunder when applied laterally to it at this degree of separation. Pressure on the trunk of the artery above completely controlled pulsation, *but did not effect any diminution* in the size of the swelling. There was no pulsation to be felt in the posterior tibial artery at the ankle. Upon applying the ear to the tumour, both unaided and with the stethoscope,

no *bruit de soufflet* could be heard, but a very loud single thump. A flannel bandage was now carefully applied from the toes to the middle of the thigh, and the same general measures as before continued.

On the 11th and 12th he progressed favourably. By the 13th he had so much improved under the chalybeate treatment, that he could lie flat upon his back in bed. His voice was stronger; he had lost the distressing beating in the head; and when visited in the evening said he felt quite comfortable. At 10 P.M. he retired for the night, and had been about an hour in bed, when he suddenly felt a twisting pain, of a very acute character, in the ham, being, as he described it, as if a corkscrew had been quickly turned into the joint, and then withdrawn with a jerk. This was followed by cramp in the leg, which grew worse and worse, assuming a burning character, and at last becoming so severe, as to make him cry out with pain. Having been sent for, I found him in the condition just described, calling for relief, and yet unwilling to allow the leg to be approached. After a little persuasion, however, he permitted a lawn handkerchief, sopped in laudanum, to be applied over the tumour, and gutta percha sheeting to be slightly bandaged outside. A full opiate was administered internally; and under the joint influence of the two he became tranquil, and in an hour dozed off to sleep.

The succeeding day no examination of the tumour itself could be gained, but, on exposing the front of the knee-joint for the purpose of loosening the bandage, a large artery was plainly *visible*, beating on the inside of the knee, and running over the condyle of the femur, showing that collateral circulation had become established.

There was also much increased action of the heart; it was forcibly pulsating on a level with the left nipple, and for two inches to the right side of it. The dulness upon percussion extended over a space of nearly three inches to the right of the left nipple, and for the same extent above and below. The pulsation in the carotid arteries was also very visible, especially on the right side. The most careful examination failed to detect any pericardial roughness, and there was no sign of mitral valvular disease beyond a slight fremitus or purring murmur, whilst the signs referable to the diseased state of the semilunar valves of the aorta were more manifest than before.

On the 18th the citrate of iron was increased to three grains thrice a day, the same general treatment being continued. On the 22nd, nine days after the attack of pain in the popliteal space, all tenderness there had subsided, and a careful exami-

nation of the ham was now allowed. The condition of the part was peculiar: all the symptoms of the previously existing tumour had disappeared, and the girth of the limb was the same as that of the opposite side. No difference could now be perceived in the two popliteal spaces when the forefinger of each hand was drawn along the course of the arteries, at the same time, on either side. The collateral vessel, already mentioned as pulsating on the inside of the knee, was still there, beating forcibly, and feeling to the touch as large as the radial artery at the wrist. The posterior tibial could now again be felt beating behind the inner ankle at its normal site, but very feebly, as compared with that of the opposite extremity.

On the 25th of January there were symptoms indicative of failing strength. The appetite had declined, and the digestion become impaired, gaseous distention of the intestines causing much pain of pleurodynic character in the left hypochondriac region. The face and jaws, too, exhibited signs of puffiness from œdematous effusion, and the urine was scanty.

Under these circumstances the citrate of iron was omitted, and an infusion of broom, with nitric ether and acetate of potash, substituted, and dry cupping, with opiate fomentations, were applied to the painful region of the side. The urine at this time, and throughout the whole period of illness, exhibited no trace of albumen either upon the addition of nitric acid or the application of heat. On the 3rd of February, the pallor of the countenance having increased with accompanying debility, tartrate of iron was added in five-grain doses to the diuretic mixture.

On the 16th, at midnight, he was awakened out of sleep by paroxysm of pain of anginal character, the breathing being very rapid and distressing, each attempt to inspire being met by short spasmodic cough. This continued for some time, and eventually subsided under repeated doses of Hoffmann's anodyne liquor in Murray's solution of camphor. From the 16th to the 20th he gradually sank, the sensorium being clouded by day, and delirium supervening at night; wine and stimulants were fruitlessly given, and he died quietly and without pain on the morning of the 20th, the pulse, just prior to dissolution, being as steady, full, and regular, at 90, as in health: the jerk previously existing from regurgitation having subsided as the heart's power of contracting declined; and the wrist, if presented out of bed to a bystander unconscious of the real nature of the case, might have been regarded as the pulse of an individual in robust health.

The body was examined thirty hours after death. Upon

raising the sternum, the pericardium floated upwards on a level with the most projecting portion of the heart, being elevated by serum effused into it to this extent, or about, in measured quantity, six ounces. The pericardium covering the heart, as well as the reflected portion of this membrane, showed no trace whatever of inflammatory action. The heart itself was about twice the natural dimensions, and obtusely rounded at its apex; the right auricle and left ventricle were considerably distended with blood. On examining the cavities consecutively, in the course of the circulation,—the right auricle was found dilated and thinned, but not otherwise diseased; the right ventricle less considerably enlarged, though somewhat so; the tricuspid valves quite sound: no trace of endocarditis having apparently ever existed in either of these cavities: the pulmonary artery and its valves were also natural. Proceeding thence to the lungs, both were congested from impeded circulation, and the air-tubes to their minute divisions exhibited conditions peculiar to congestive bronchitis. Returning to the left side of the heart, the pulmonary veins were natural; the left auricle dilated, and its structure thickened; the left ventricle greatly enlarged, and its walls hypertrophied; the mitral valve sound, with the exception of its anterior segment, where were deposited a very few specks of fibrous vegetation. At the aortic valves, as diagnosed, lay the sole seat of disease. Each semilunar division was enlarged to about twice its natural dimensions in diameter, rolled upon itself and everted, projecting upwards towards the arch of the aorta, encrusted upon every direction with masses of fibrine, gray and nodulated; some in tubercles, others in pendant bunches, forming warty growths with narrow pedicles, or cauliflower-like vegetations, to an extreme degree. Immediately above the semilunar valves, in the sinus of the aorta, existed a large sloughy ulcer, which had destroyed the lining and middle coats of the artery. Beyond this, the aorta was slightly dilated, and bore traces of atheromatous deposit to some extent.

The popliteal artery was then carefully dissected out from its exit from the tendinous canal of the adductor muscles to below its tibial divisions. Examined by the eye, it presented a natural appearance as far as the giving off of the articular vessels; below this it spread out into an oval, flattened body, somewhat resembling the cauda equina of the spinal cord. It then became slightly narrowed before dividing into the tibial arteries, which were both pervious, but their venæ comitantes were obliterated, filled with clots of consolidated blood, of dark modena hue, lodged in separated oval nodules. To the touch, the

artery itself above appeared perfectly healthy, though whitish throughout the portion described, but it felt densely solid and firm.

Upon slitting it up, and exposing its cavity throughout, no disease whatever could be found in the upper portion, but towards its lower end it had been converted into a fibrous cord of greyish-yellow colour, as solid as the walls of a long-standing gristly stricture of the urinary canal. In the intervening space was lodged a clot of fibrine, intimately connected to and with the artery below, less closely adherent in the middle, and only applied against its lining membrane above, whence it stretched upwards in a pediculated form to the nearest collateral branch. Its colour, too, greatly differed throughout this course, being gray at the inferior portion, yellow in the central, and blood-coloured at the top, its density decreasing in proportion as the fibrine verged from organic to mere clot.

Such were the local appearances in this case. Here, I think it will be allowed, is demonstrated the value of post-mortem examinations. We see symptoms, anomalous and obscure during life, made intelligible, patent, and clear; all doubt and mystery removed; and the details of a case rendered apparent, which might otherwise have (from their unusual character) become the subject of much speculation, if not of discussion and dispute.

We see symptoms so strongly simulating aneurism, that it is difficult to decide in the negative as to its existence. We have pre-existing arterial disease in a frame which had been subjected to the effects of syphilis and mercury; a pulsating tumour in the most frequent seat of the disease, whose diastole is arrested by pressure on the cardiac side; numbness and slight pain in the limb from distention of the passing nerves; œdema of the foot, and passive congestion from pressure on the veins and lymphatics; diminished temperature from interrupted arterial circulation, and loss of pulsation in the branches of the vessel below, yet differing from aneurism in two very important points, viz., being totally devoid of *bruit de soufflet*, upon the most careful examination by the ear; and though fluid and of recent formation, yet not decreasing in size when the flow of blood was arrested by pressure from above.

These two points led to the diagnosis that there was no true aneurismal sac communicating with the arterial tube, but that the whole vessel was dilated,—a circumstance for the occurrence of which weeks, or even months, would, under ordinary circumstances, be required, yet here developed in a few hours. Soon, however, a fresh train of symptoms, resembling

aneurism, set in: as in the majority of the cases cured by compression, sudden pain was experienced in the tumour, of an almost excruciating character, lasting for the customary period, then subsiding, and being followed by well-developed collateral circulation. But now again there is a divergence from the simile. No tumour of densely hard character, resulting from the consolidated blood, is to be found in the popliteal space at the seat of disease; but instead, the feeling communicated to the fingers as if the artery were again pervious throughout, confirmatory evidence existing in the restoration of circulation in the posterior tibial artery at the ankle. All these conflicting circumstances have been cleared up by the post-mortem examination.

We find the artery pervious through some extent of the popliteal space, yet at its inferior extremity firmly and entirely closed, its canal plugged by fibrine superiorly, the walls of the artery cohering below, or like a gristly stricture consolidated by fibrous deposit.

We find no traces of a sac or aneurismal pouch; no atheromatous disease of the vessel in its course, the artery healthy at this spot, as well as both above and below. We have the artery obstructed, and rendered impervious to the blood-passage through it, and secondary consequences resulting. We trace them to the centre of the circulation—the heart, and there discover appearances that will readily resolve the phenomena in question,—loosely attached fibrinous vegetations from the sigmoid valves, hanging by pedicles into the aorta, and so delicately adherent, that a touch almost is sufficient to detach them from their site.

Here is a ready explanation of the whole; and yet, before accepting it as certain, we must take another view of the case, and determine that the symptoms did not depend upon acute local arteritis,—such a condition as has been observed by Dr. Stokes in the following case[a]:—

"A young person, with permanently patent aortic opening, had, whilst labouring under the consequences of this affection, sudden pain in the calf of the leg, accompanied by pulsation in the tibial vessels to a most violent degree; next, a severe attack of pain in the biceps muscle, with immense local arterial excitement, succeeded by loss of pulsation at the wrist. Then, leaving this spot, irritation elsewhere, local arterial throbbing setting in consecutively in different portions of the

[a] This case is unpublished, and for permission to refer to it here I am indebted to Dr. Stokes.

circulatory system in turn; these attacks, however, accompanied by rigors, fever, and sweating, that ran the patient down and accelerated his end. Here no dissection was allowed."

That the obliteration of the popliteal artery in the case described did not result from local arteritis, but was caused by mechanical plugging of the vessel by a foreign body, I have not a doubt: and for this reason, viz., that had it been caused by arteritis, there would have existed symptoms of an inflammatory character in the general system, and the disease would not have been confined and limited to a single spot.

It may be urged, however, that, in the examples of plugging of the arteries by fibrinous deposits detached from the interior of the heart, which have been adduced by Dr. Kirkes in his paper, already referred to, the masses of vegetation were themselves discovered, not adherent to the coats of the arteries in which they were lodged, but merely lying loosely in the caliber of the vessel. In the case under notice, on the contrary, we have no traces of this vegetation existing. We find, at the spot of its arrest, the artery perfectly obliterated, converted into a fibrous cord. This condition, then, I believe to have been brought about in the following way:—The vegetation became impacted in the vessel so firmly as totally to exclude circulation. The artery then, behind the seat of obstruction, became distended by dilatation of all its coats; inflammatory action was set up at the point of arrest; lymph was in consequence effused, adhesion ensued, and obliteration of the vessel at this spot followed as the final result. Whilst this occurred, the artery above, retaining its elasticity to a considerable degree, contracted upon the blood contained in the dilated portion, expelled the greater portion of it through the collateral vessels, and emptied itself, so far as to prevent consolidation of a sufficient amount of blood to afford to the touch the sensation of solid tumour, which is felt after rapid cure of aneurism here. A small quantity necessarily remained in the caliber of the artery, which, retained here, coagulated, and formed the clot found within this space, as exhibited in the preparation, and represented[a] in the lithograph annexed.

With such complete stoppage of circulation through the limb as occurred in this case, it is, at first sight, a matter of wonder that mortification of the extremity did not ensue, such as followed in the case quoted by Legroux. Why it did not, I

[a] This preparation, and the original drawing by Mr. Connolly, are in the author's possession.

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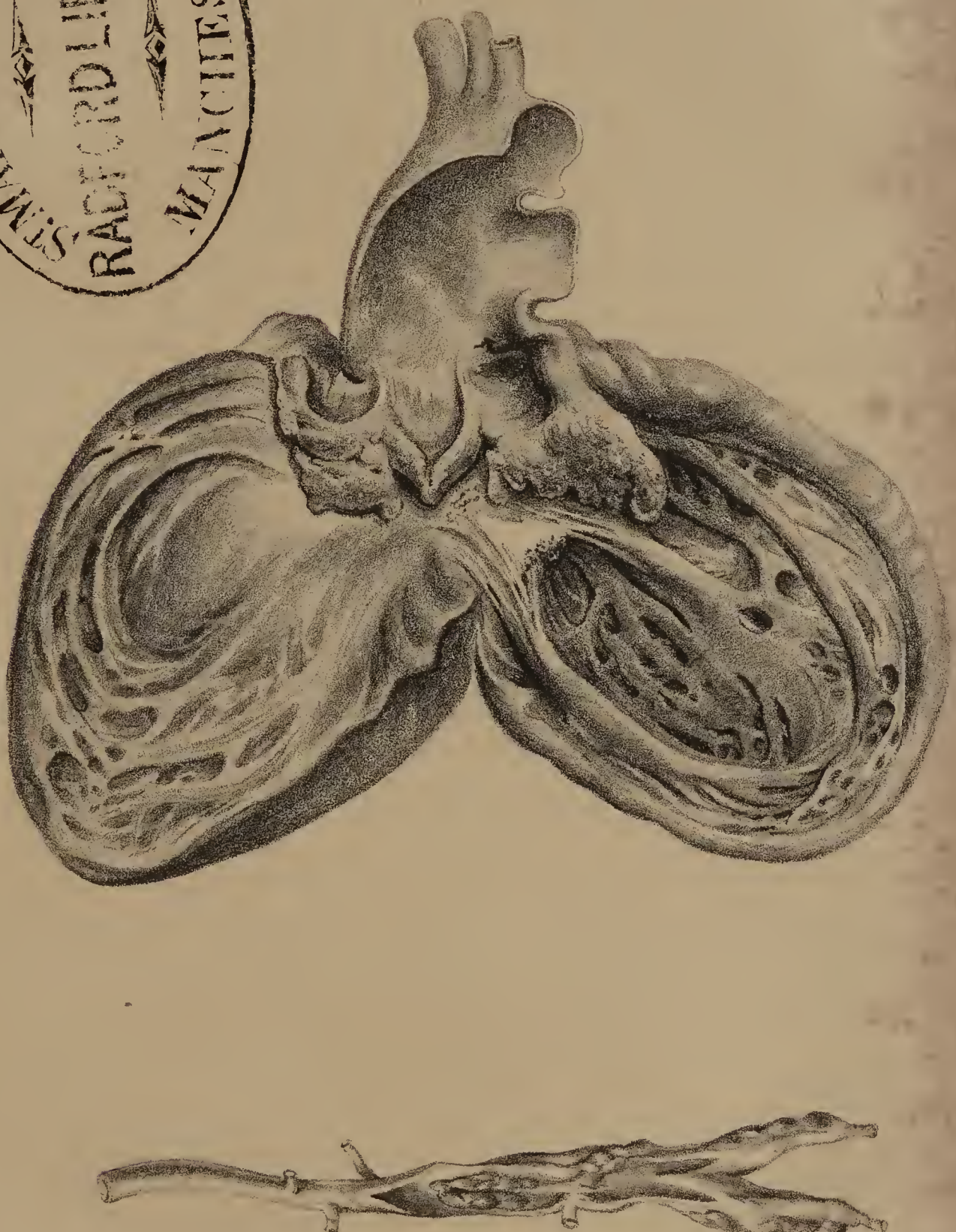

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think may be readily explained by reference to the report. The vessels had been so long subjected to forcible distention, from a greatly enlarged and powerfully contracting heart, that they adapted themselves with more than ordinary readiness to the circumstances of the case, and speedily dilated, so as to form a collateral circulation sufficient to give free passage to the blood, and thus prevent gangrene of the leg and foot. A more difficult point of solution is the reason why the artery, upon blocking of its canal, should in this instance have dilated into a tumour, and such a condition not equally obtain when a ligature is ordinarily applied. The explanation, I think, however, may be satisfactorily afforded by referring to the peculiar condition of the individual himself in this case. With cardiac enlargement and disease of the aortic valves, anemia, and broken health, to the degree which existed here, no surgeon could think of resorting to the operation by ligature, if an aneurism did exist. We have not, nor, I think, are we likely to have, analogous cases, subjected to the ligature, and consequently are deprived of the only sources of practical deduction; but, in their absence, we may, I think, fairly draw an inference from negative conclusions.

One subject further remains for our consideration, and from its consequences it becomes the most important of the whole. I mean, the cause of the warty vegetations. Are they simple polypiform concretions resulting from coagulations of the blood, as regarded by Laennec and confirmed by Andral? Are they the result of some peculiar condition of the blood, or particular constitution of the individual, as suggested by Dr. Hope? Do they follow as the consequence of inflammation of the endocardium? Or, as laid down by Dr. Hughes, from coagulation of the blood upon the inflamed membrane? Rheumatic inflammation is now their generally assigned cause, and is, in this instance, confirmed by the history of the case. I have taken the trouble of tracing it carefully back, and find that, so far distant as the year 1846, when only eighteen years of age, this patient was the subject of fibrous rheumatic inflammation. This attack did not, however, in my opinion, affect the semilunar valves, for recovery was perfect, and succeeding health good, a corroborative proof of which is to be found in the fact of his having passed the careful medical inspection of a Life Assurance Office referee in the intervening time. The mischief, I think, we may assume to have been the result of the last acute attack upon the 8th of December, and for this reason, that the most careful stethoscopic examination, prior to this date, yielded no physical sound indicative of disease—a

condition which immediately followed upon this attack, was clearly and obviously present upon the 16th, and remained constant to the time of death. Occurring then, however, I do not, however, refer it to *general* endocardial inflammation, for no trace of such affection could upon *post-mortem* examination be shown to have existed in the lining membrane of the heart, but, in inflammation only of that portion which, from its peculiar nature, became more liable than any other to be the subject of rheumatic attack, viz., the tendinous structure of the passive semilunar valves.

The fibrous structure of the latter must be regarded as affording a tissue much more likely of assault than the fine serous membrane of the endocardium; and, so regarded, inflamatory swelling of the valves once set up, exudation of lymph has only to occur, in a greater or less degree, to form the granular or warty growth, or assume the state of cauliflower excrescence. Upon the size and shape of these vegetations of the valves must necessarily, and to a great extent, depend the attendant danger. The larger and more friable the growth, the more likelihood of their being detached, and when set free their size must, of course, determine the point of arrest; the greater their magnitude, the more important is it the vessel in which they become impacted; but even in the smallest form, such as in casual inspection of post-mortem examinations might be considered as of trifling importance, their presence, as demonstrated by Dr. Hughes, may be the cause indirectly of fatal results, by retarding the blood in its progress, and thus inducing fibrinous concretions, which, equally with the vegetation itself, may be carried into the circulating fluid, be lodged in the cavity of a vessel, and produce death by paralysis if of the head, or gangrene if into an extremity of the body.

I have brought this case forward now because I consider it one of interest to both the practical surgeon and the physician; and as it is a subject of great importance, in connexion with arterial disease, I purpose at some future time, when speaking of aneurism, to refer more particularly to it.

Art. XVII.—*On Dislocation of the Cervical Vertebræ, without Fracture.* By Richard G. H. Butcher, F. R. C. S. I., Surgeon to Mercer's Hospital; Examiner on Anatomy and Physiology in the Royal College of Surgeons in Ireland, &c., &c., &c.

In order that fatal compression be exerted upon the spinal marrow in dislocation of the vertebræ without fracture, it is essential that the intervertebral substance be disruptured. The following well-marked case, occurring in the cervical region, forcibly illustrates the point, and I deem it sufficiently interesting to be placed in the records of surgery.

Michael Roche, aged 36 years, admitted into Mercer's Hospital, under my care, at half-past 4 in the afternoon of February 4th, 1853. The man, being employed as porter at a coach-office, was in the act of arranging some luggage on the top of a vehicle, when he slipped off, and fell upon the pavement on his head. He was quite sensible after the fall, but was instantly deprived of all power of motion in the lower limbs, and nearly so in the upper. The first complaint he made was relative to excruciating pain at the root of the neck. The accident occurred not more than two hundred yards from the hospital, and I was summoned immediately to see him; a few minutes had only elapsed, and I found him in the following condition:—He was perfectly collected and sensible, the brain not being affected; he deplored his condition audibly, but the voice was feeble and could not be raised in answering questions. There was a lacerated wound of the scalp, about two inches in length, over the occipital bone, at its superior margin, and to the left side just below where it comes in contact with the superior posterior angle of the parietal bone. I examined the wound. The periosteum was slightly detached, but the bone was not depressed; he did not complain of pain here, but referred all his sufferings to the root of the neck. On examination, a manifest depression was perceptible at about the junction of the fifth and sixth cervical vertebræ; and this was rendered more strikingly conspicuous by a transverse sulcus in the corresponding soft parts. The head was inclined a little backwards, and to the right side, and the face was also slightly rotated in the same direction. The neck was somewhat prominent in front, rendered preternaturally so by the bulging forwards of the trachea. The muscles of the region were in bold relief, steadying the parts in their new and acquired position, and exerting manifestly a protective influence against motion.

The entire neck and face appeared somewhat congested, though no marks of contusion were visible, even over the immediate site of injury in the spine. The patient lay upon his back, the position which he desired on being placed in bed. The lower extremities were extended, flaccid, and motionless; neither was there sensibility in them, nor over the surface of the body as high as the neck, and all power of voluntary motion was lost. The upper extremities were only partially affected as to sensation, the fore-arms and fingers were entirely deprived of it, while the upper arms maintained it in a minor degree; but the power of motion, as in the lower extremities, was totally annihilated; the upper limbs lay across the chest; the fore-arms bent, nearly at right angles with the arms, and the fingers contracted. On the slightest attempt to alter this position, intense pain was experienced, "as of the darting of a knife" at the root of the neck. There was total paralysis of the intercostal muscles; the chest was motionless, except at its inferior margin; and the abdominal muscles were flaccid. Respiration was merely performed by the diaphragm; thus the muscles of expiration seemed likewise deprived of their motor power; and the expiratory effort was effected by the elasticity of the thoracic and abdominal parietes, restoring the parts which had been previously displaced by the diaphragm. The pulse was slow and weak, and the surface of the body cold. The sphincter ani had given way, and fæces were passed involuntarily. The penis was flaccid, and the bladder empty.

The treatment adopted in the first instance was entirely directed towards supporting the neck evenly, and propping the patient on either side with pillows; then the application of heated jars to the pit of the stomach and extremities, warm drinks, &c., to bring about re-action.

In five hours the pulse became full and strong, the temperature of the body rose, and the heat in the lower limbs was actually greater than natural. The respiration, which was before slow and tranquil, became hurried, and, in short, all the evidences of re-action were strikingly manifest. Ordered eighteen leeches over the injured part of the spine, and ten grains of calomel, with four of James' powder, in a bolus. A catheter was passed, and about three ounces of urine drawn off.

February 5th. He had imperfect sleep in the course of the night; position of the body as placed on yesterday. Pulse full; action of the heart steady; respiration rather slower; refers "indescribable pain" to the root of the neck; total annihilation of sensation and power of motion in the parts already referred to. The increased development of heat in the lower

extremities is very remarkable, and not at all so conspicuous in the upper; there is also to-day slight tremulous motion of the cheeks and lips. There has been no involuntary passage from the bowels since yesterday, but the entire abdomen is inflated and tympanitic. The bladder is distended. I passed a catheter, and drew off somewhat more than a pint of urine, a little darker than natural, and faintly acid. The long tube, passed up the rectum, permitted a large quantity of gas to escape. He was ordered eight leeches to the spine, calomel, two grains, and the eighth of a grain of opium every two hours. The patient requested to have his position altered, and to be placed upon the left side, which was not accomplished without much suffering, but when steadied, was a position most favourable for the dislocation of the neck.

3 P. M.—I passed the catheter, and drew off a pint and a half of urine, more acid than that removed in the morning.

6th. 10 A.M.—He has been sleeping for short periods through the night, and now seems to be in a prolonged doze, yet when roused up speaks sensibly, but again quickly relapses into quiet, and shuts his eyes. The eyes are filmy, and lack vivacity. Pulse and heart steady in beat, but weak in force. Respiration hurried and feeble. The patient makes ineffective attempts to get rid of some increased secretion of mucus from the bronchial tubes, but the cough is imperfect—the act fails; the expiratory muscles remain as from the first, paralyzed. The development of heat in the lower limbs has become even greater than at any former period, though the powers of life are more prostrated. Abdomen greatly swollen, and increased tympanitis. I passed the long tube many inches up the bowel, and allowed a quantity of air to escape. Bladder distended; the catheter was introduced, and a pint of urine drawn off, far more dark and acid than on yesterday. Mouth touched by the mercury, its administration stopped.

3 P. M.—Drew off a pint of urine, highly acid and dark-coloured.

February 7th. 10 A. M.—He has remained since last evening in almost a constant doze, is easily roused, and is quite sensible, but answers questions with difficulty, owing to embarrassed respiration; the countenance is expressive of great anxiety and distress, the brows furrowed and cheeks haggard. The pulse is weak and small, the upper extremities and body cold, but the lower limbs still preserve a great exaltation of temperature. He continued to grow worse, his respiration more laboured, and he expired at 1 o'clock, fifty-seven hours after the accident, retaining his faculties unclouded to the last.

Examination nineteen hours after death.—The neck rigid, in the same position as it maintained during life, and with all the external indications of displacement as strikingly marked. On cutting through the muscles, and detaching them from the back of the spine, a quantity of extravasated blood was situated in a circumscribed way, repullulating, as it were, from the immediate site of the injury. The supraspinous ligament, derived from the ligamentum nuchæ, was torn through between the fifth and sixth cervical vertebræ, as well as the muscular fibres in the same locality, filling the offices of interspinous ligament; the articulating processes of the fifth and sixth cervical vertebræ were apart more than a quarter of an inch, particularly on the left side; the partial rotation of the head and five superior vertebræ to the right side will account for this inequality; it is scarcely necessary to mention their little capsular ligaments were torn, and their polished cartilaginous surfaces exposed. On examining the front of the column, the body of the fifth cervical vertebra formed a remarkable prominence, the connecting fibro-cartilage between it and the sixth, being entirely torn through, permitted of the anterior displacement of the former by the depth of half its body in front of the latter, while two-thirds of the intervertebral substance adhered to the sixth, and one-third to the fifth vertebra, the anterior common ligament of the spine was perfect in its structure, being only separated to a small extent from the margins of the displaced bones. In order to prosecute the investigation, I removed carefully the whole of the cervical spine, without in the least degree disturbing the parts, and plunged the entire into alcohol, so as to stiffen them in their acquired position. In eight-and-forty hours I removed the transverse processes and laminæ on the left side, cutting through the pedicles in front of the former, and severing the latter close to the bifid spine. This section was readily effected by means of a fine bow saw, such as I employ in amputations. The theca was slit up, laid to either side, and the spinal marrow exposed; the specimen thus illustrated beautifully to how great an extent the antero-posterior diameter of the vertebral canal was lessened,—from careful measurement, I should say, by about one-third; and how the fatal pressure was produced between the body of the vertebra below the diastasis and the arch of the fifth above it; the slightest fragment of bone could not be detected as having been detached in the site of the injury. The preparation, as I have described it, remains in my possession, and is catalogued "Dislocation of the cervical vertebræ without fracture."

The mode in which the force was applied, in this instance, sufficiently accounts for the effect produced. The man fell upon his head, which, together with the five superior vertebræ, was driven forward, while the trunk and lower extremities, falling backwards, propelled the inferior part of the column in the contrary direction. The position of the wound, on the occipital bone, will account for the rotatory displacement towards the right side. It is unnecessary to recapitulate; the treatment of the case was directed with the following objects:—First, to steady the displaced spine, effected by the judicious arrangement of pillows; for here the removal of the deformity could not be procured by gentle means, and more violent measures were not had recourse to: secondly, large local depletion was employed to prevent inflammation and its consequences: and, lastly, the exhibition of mercury to insure this object, and protect the phrenic nerves from being involved by softening of the spinal marrow, and extension to their roots. Though all these intentions seemed to be fulfilled, as verified by post-mortem examination, yet this did not stay the rapidly fatal issue: death in fifty-seven hours after the accident.

Dislocation of the vertebræ, without fracture, produced by accident, is so uncommon, if we exclude the first and second bones of the neck, that the likelihood of its occurrence has not only been doubted, but denied by some of the very highest authorities. Boyer, in his "Traité des Maladies Chirurgicales," which contains the valuable *resumè* of his great experience, dwells upon the circumstances which prevent the displacement of the bodies of the vertebræ, and, without directly denying it, appears clearly to disbelieve its possibility[a]. Delpech maintains it, as a point proved by observation, that the bodies of the vertebræ cannot be dislocated[b]. Sir A. Cooper states:—"In the numerous instances which I have seen of violence done to the spine, I have never witnessed a separation of one vertebra from another, through the intervertebral substance, without fracture of the articular processes, or, if those processes remain unbroken, without a fracture through the bodies of the vertebræ. Still I would not be understood to deny the possibility of dislocation of the cervical vertebræ, as their articulating processes are placed more obliquely than those of the other vertebræ. I must, however, observe, that, from the vicinity of our hospitals to the river, sailors are often brought into them

[a] Tom. iv. cap. iv.

[b] Précis Élémentaire des Maladies Réputées Chirurgicales, tom. iii. p. 42.

with injuries of the spine, by falls from the yard-arm to the deck, and as there is almost always an opportunity of inspection in these cases, a dislocation must be very unusual, since I have never met with a single instance of it, those injuries having all proved to be fractures with displacement"[a]. If we consider, however, as Dupuytren remarks, the number and strength of the ligaments which unite the vertebræ together, the almost vertical or slightly oblique facing of their articulating processes, together with the extended surface by which their bodies are connected, and the small amount of motion admitted between any two, it must be conceded that all these points combined necessarily render dislocation very difficult; but when we superadd the comparative facility with which the bodies of the vertebræ give way by fracture under external violence, one almost ceases to be surprised at the scepticism manifested by most writers regarding the feasibility of simple luxation.

A few well-accredited cases are on record of pure dislocation of the spine, almost similar to the one occurring in my practice.

Mr. Lawrence relates one case, proving that complete dislocation, both of the articular processes and body without fracture, may occur in the cervical region of the spine, and the preparation is preserved in the Museum of St. Bartholomew's Hospital. Dupuytren recites, in his Leçons Orales, many instances of extensive displacement; but in each there was the complication of fracture. He only gives one case of pure and fatal dislocation. It is that of a sailor who was bathing in the sea, with a sail spread to keep off the sharks; and in plunging head foremost he came in contact with the sail, and was taken on board with paralysis, and all the symptoms of compressed spinal cord below the neck; he died on the seventh day. On examining the body, the inferior articular processes of the sixth cervical vertebra were found dislocated, and there was rupture of the corresponding fibro-cartilage, with laceration of the common anterior and elastic ligaments. The body of the sixth cervical projected forwards; the spinal cord was compressed, softened, and injected. Mr. Samuel Cooper, in his Surgical Dictionary, alludes to a specimen of complete dislocation of the middle cervical vertebra without fracture, which was lent to him by a gentleman attending his lectures, and which he had shown to the surgical students of University College. The accident befel a person who was sitting upon an omnibus as it

[a] Cooper's Practice of Surgery, edited by Lee, vol. ii. p. 481.

passed rapidly under a gateway, the upper part of which struck against him with great violence. A very interesting case of this rare accident has been published by the late Mr. Liston in the Lancet for October, 1837.

The patient, a carpenter, thirty-five years of age, was, on the evening previous to his admission to hospital, sitting on a rail about four feet in height, when he fell suddenly backwards, pitching on the ground with considerable force, and falling upon his shoulders and the lower part of his neck. He was quite sober at the time. On being taken up he was found to be sensible, but the use of both his arms and legs was entirely lost. He was removed to a shop in the neighbourhood, where he remained during the night, and in the morning at 9 o'clock was carried to hospital. He was sensible on his admission, and free from pain when he remained at rest; when he was moved, however, he complained of great pain across the shoulders. The upper and lower extremities, and almost the entire trunk, were completely paralyzed, both as regarded sensation and motion, which were, however, natural in the head, neck, upper third of the thorax, and a few inches below the shoulders. The breathing was oppressed, and carried on almost entirely by the diaphragm. At 5 P. M. all his symptoms gradually grew worse, and at 8 P. M. he died.

The autopsy was performed eighteen hours after death. The blood, which was perfectly fluid, was much effused between the posterior muscles of the neck. There was complete luxation between the fourth and fifth cervical vertebræ, the latter being thrown backwards. The proper ligaments of the vertebræ were lacerated, as were also some of the tendons of the longus colli muscle. *There was no fracture of the articulating processes.* On opening the vertebral canal, the cord was found to be compressed between the arch of the fourth and body of the fifth cervical vertebræ; the membranes of the cord were not much injected. The cord appeared a little softened at the compressed portion, but otherwise its texture was unaltered.

In Norris' Statistics of Fractures and Dislocations, published in the American Journal of Medical Science for April, 1841, there is to be found one case of pure dislocation of the spine. The patient, a man aged 30, was admitted to hospital early on the morning of the 9th September, 1831. At 11 o'clock on the previous night, while in a state of intoxication, he had been thrown headlong against the curbstone from a gig that he was driving at a furious rate. There was complete paralysis of the lower extremities, chest, and lower half of the

trunk. He complained of great pain over the lower cervical vertebræ; but so much swelling and ecchymosis existed at this part, that the state of the spinal column could not be satisfactorily ascertained. When placed in the erect position, he cried out from pain, unless his forehead was firmly supported; and when laid on his back, his head was seen to be thrown a little forwards, and pushed down upon his chest. The hands and arms retained their sensibility, but he was unable to double his fist, or seize any thing firmly. His respiration was hurried, difficult, and performed entirely by the diaphragm. Priapism existed, and continued constant till the period of death. On the morning of the 11th he died.

Autopsy.—A considerable effusion of blood was found in the areolar tissue beneath the skin, as well as between the muscles on the back part of the neck. The yellow ligaments, and the ligamentous fibres, holding together the oblique processes, were ruptured; and the fifth cervical vertebra was thrown forwards upon the sixth. Examined in front, the vertebral ligaments were found also to be ruptured, and the inter-vertebral substance torn up, so that the body of the fifth was completely separated from, and projected over, the sixth. Accurate examination, after the removal of the upper part of the spinal column, proved *that no fracture existed*, and that the injury consisted in *a simple displacement of both body and processes of the vertebræ.*

A most remarkable instance of dislocation of the spine, without fracture, is related in the Gazette Médicale for November, 1841, by M. Lasalle:—A man, thirty-six years old, was taken to the Maison Royale de Santé, at Charenton, in a state of furious mania, and it was found necessary to confine him to his chair by means of two leather straps, which went from the upper part of its back and fixed his shoulders; and two others, which went from the same part a little lower down, and were fastened to his arms. After making various efforts to break from his confinement, the patient rose up from his seat, threw his head forcibly backwards, and then flung it with great violence forwards. After this last movement, the head remained bent on the neck, and the neck on the chest, and his limbs were completely paralyzed. The author saw him soon afterwards, and found an absolute loss of power in all the muscles below the neck, except the diaphragm and those of the arms, which were but partially paralyzed. There was neither bruise, swelling, nor deformity in the course of the vertebral column. About thirty-six hours after these events,

which were witnessed by a keeper and a fellow-patient, the man died, with all the usual signs of pressure on the cervical portion of the cord. On examination, a solution of continuity was found between the fifth and sixth cervical vertebræ, the posterior cervical ligament and the interspinales muscles were ruptured, and no bond of union remained between the spinous processes, whose bases were separated, so as to expose the remains of the ligamentum subflavum and the membranes of the cord. The intervertebral substance was torn; a part remained attached to the fifth, a part to the sixth vertebra; but there was no fracture of the bones, nor any material displacement of them. The dura-mater, at the seat of the injury, was tinged with blood, and the surrounding cellular tissue was infiltrated with it. None of the membranes were torn; but in the interior of the cord, opposite the injury, there was a vast ecchymosis, extending downwards to the second dorsal, and upwards to the third cervical vertebræ. Rust affirms that even the lumbar and dorsal vertebræ may be dislocated, as quoted by Lawrence[a], and Sir C. Bell mentions one instance of it.

In the Edinburgh Medical and Surgical Journal, a case of complete dislocation, backwards, of the fifth from the sixth cervical vertebra, is recorded.

The patient, a man aged 37, was admitted into Haslar Hospital, suffering from the effects of a severe fall, where he died, fifty-five hours and a half after the accident. *Autopsy.*—On the posterior surface of the body, extending from the occiput to as far as the sixth or seventh dorsal vertebra, there was considerable ecchymosis; and in making a section of the integuments and subcutaneous areolar tissue a quantity of blood was found effused into its texture. Coagulated blood was also, in great quantity, found surrounding the muscular fibres, a number of which were ruptured and softened. These being cleared away, a little more careful dissection exposed to view a considerable displacement, backwards, of the fifth from the sixth cervical vertebra. It was found that the little finger could be passed into the spinal canal, and that the body of the fifth pressed severely on the spinal cord, and rested on the lamina and spinous process of the sixth cervical vertebra. The parts being removed, it was then ascertained, beyond all doubt, that *the injury was a complete dislocation without fracture.* The ligaments and intervertebral substance were all ruptured. There are other points of interest connected with the history and dis-

[a] Medico-Chirurgical Transactions, vol. xv.

section of this case to which I must refer the reader. In Miller's Practice of Surgery a case is related, and the appearances figured, where dislocation took place between the fourth and fifth cervical vertebræ. The patient fell backwards over a high paling, and alighted on his head. The cord was torn, complete paralysis followed, and the issue was fatal within a few days.

These cases, taken connectedly, are, I consider, of great value. First: Because, in most works on practical surgery, the fact of pure dislocation of the spine, which they are intended to elucidate, is entirely overlooked; and secondly: A perusal of them, I conceive, will tend to make the surgeon cautious before resorting to operative measures in lesions of the spinal column, owing to the numerous difficulties which beset the task of accurate diagnosis.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Principles and Practice of Surgery. By WILLIAM PIRRIE, F. R. S. E., &c., &c. London: Churchill. 1852. 8vo. pp. 952. Illustrated by numerous Engravings on wood.

Bulletin Général de Thérapeutique. Vols. XL., XLI., and XLII. Paris: 1851–52.

THROUGH the kindness of M. Debout, Editor of the above excellent French periodical, in permitting us to use a selection from the woodcuts he has employed in the illustration of various surgical essays, which have been published in his Journal during the last two years, we are enabled to lay before our readers a descriptive account of some of the most important contributions to operative surgery which have been made by the French school since our former *resumè* of this subject[a]. On the present occasion we shall embody our remarks in a review of the most recently published book on British Surgery, that of Mr. Pirrie, which, now that it has received the examination, for the most part with a favourable result, of the English and Scotch reviewers, fairly demands a notice at this side of the channel.

The impression which exists, that, in order to emerge from obscurity, a professional man must "become an author," has acted as a powerful inducement to many to appear in print. Some, possessing the *cacöethes scribendi* in a morbid degree, tax their brains and rake up all their resources, to procure materials upon which to write; others, devoid of originality of thought, possessed of but scanty information, and wanting in ingenuity sufficient to turn to their own account the labours of others, yet having a praiseworthy industry, are content if they

[a] Vol. x. N. S., p. 107.

can lay claim to authorship by constructing a work which is entirely compiled from the writings of others, and in which descriptions of the more important points connected with the different subjects are culled from the labours of distinguished men, and carefully put together.

To write well, and to give information upon any department of surgery, is a difficult task; but to construct a *good* book, embracing the entire domain of surgery, is an undertaking few could accomplish with complete success. Indeed, the character of the book must differ, as it may be designed for the instruction of the student, or as a book of reference for the practitioner; and its merit should be tested according to the manner in which either object has been carried out.

The work of Mr. Pirrie is dedicated to the surgical students of the Marischal College and University of Aberdeen, being, as is stated in the Preface, a compendium of the author's lectures, which he has published in accordance with the frequently expressed wishes of his class. After giving it a careful and dispassionate perusal, we are bound to admit that the author has, to a great extent, accomplished his object, and has furnished the students of his own class with a concise and clear account of most surgical subjects. Reference is generally made to the best and most recent writers upon each disease; and in the operative department of the work, well-executed woodcuts, copied from Mr. Liston's work, are introduced for the purpose of illustration.

But we very much doubt how far a compendium of this description is to be approved of as a means of conveying instruction. Too great condensation is incompatible with an easy acquisition of knowledge; and when certain facts and statements are put forward, in an abrupt and isolated manner, without explanation or comment, the memory is taxed to a greater extent for the time being, and yet the impression made is evanescent. A mind which is to be formed to any particular inquiry requires to be gradually shaped and moulded to it, and how can this be done if the information is conveyed unconnectedly and completely detached from all explanatory matter?

We feel confident that this is indeed the great evil in the education of the medical student.

Now let us take each of the subjects treated of in Mr. Pirrie's work, and as we go along it will be seen how far the method adopted by him is calculated to answer the purpose of sound instruction.

The volume opens, as most other similar works do, with the subject of inflammation,—one of vast magnitude and ex-

tent, of the highest interest to the physiologist, and of the greatest importance to the practitioner,—a subject which has been explored, and is still in progress of further investigation, by the ablest scientific researchers, and has been always viewed as the most essential study by the practical surgeon. This subject is shortly despatched in Mr. Pirrie's work, thirty-eight pages including the whole theory of inflammation, its events and terminations, and its treatment, together with abscesses, ulcers, and mortification. A clear and concise account of the most recent views of the inflammatory process, particularly as they have been established by Bennett and Wharton Jones, is, no doubt, given in as far as they may be sufficient for the junior student; but what a deficiency of information is to be observed upon the important subjects of suppuration, ulceration, and mortification! "When purulent matter," says the author, "is confined in the parenchyma of a part, in a cavity which is not natural, it constitutes an abscess:" here is the entire account of the nature of an abscess! No description of the manner in which it is formed, how the cyst is produced, how pus is furnished, and how it makes its way to the surface, is given. Acute abscess is spoken of, and its symptoms and treatment briefly detailed, but the student is not made acquainted with what an acute abscess *really* is, wherein consists its essential condition, and what are the characters by which it forms a striking contrast to the chronic. But if the information upon acute abscesses be meagre, that upon chronic is still more spare:—

"Collections of matter sometimes form slowly and insidiously, and the symptoms of inflammation which precede them are but slightly, if at all, perceptible; in such cases, the abscesses are said to be chronic. These collections often attain a great size; there being little fibrin effused around the matter, the sac is thin, and the resistance to extension feeble; they are frequently irregular in form, and the superimposed skin remains unaltered in colour."

This, with a few observations upon the treatment, constitutes all our author has to say upon the subject of chronic abscesses. The peculiarities of this form of abscess, its differential diagnosis, the question as to the propriety of artificial opening, and the consequences of such plan, are entirely unnoticed; upon these points the book is completely barren of information. How, may we ask, could any, even a first year's student, glean as much knowledge upon the subjects alluded to from Mr. Pirrie's volume, as would satisfy his own inquiries? Mr. Pirrie may answer, that his work was chiefly designed for those

students who have attended his lectures, being a means of refreshing or assisting their memory, but then the utility of the book becomes very limited indeed; it can never serve for the instruction of students generally; so that our author can scarcely expect that his secondary object, which may be inferred from the expression,—"I would venture to hope that others may find it not unserviceable,"—can be realized.

We now leave the subject of inflammation, and passing by that of wounds and burns, let us pause to consider the next point treated of, viz. fractures, the importance of a knowledge of which cannot be over-estimated. The author commences with fractures of the fore-arm, and proposes to consider them under the following heads:—

"In treating of these fractures, it is proposed to consider—First, the Classification or arrangement of them; second, the Comparative Frequency of Cases belonging to each Class; third, the Symptoms and Nature of the Displacement peculiar to each Fracture; and, fourth, the Treatment proper to each Class."

Fracture of the radius is of every-day occurrence, particularly that form which involves the lower or carpal extremity of the bone; and there is no fracture in the body which, if not carefully and accurately managed, will lead to greater deformity and impairment of motion. We cannot, then, understand why Mr. Pirrie leaves almost unnoticed fracture of the carpal extremity of the radius. Surely, as surgeon to a large hospital, he must be aware that no injury requires a stricter attention to the principles of scientific management than it, and in which, accordingly, the surgical student should be more particularly instructed. Reference is not even made to those works in which a description of this particular fracture is well given; no tribute is paid to the late lamented Mr. Colles, whose account of the symptoms and characters of this injury is unsurpassed,—nor allusion made to the names of Mr. Adams or Professor Smith, who have more recently described its anatomical characters especially, in so admirable a manner.

Fractures of the upper extremity of the humerus are considered under three heads:—First, "Fracture below the insertions of the three muscles, and above the insertion of the deltoid." Second, "Fracture above the insertions of the three muscles into the bicipital groove, and below the tuberosities; or, as it is often called, fracture of the surgical neck." Third, "Fracture of the anatomical neck, or between the ball and tuberosities." But what of the most important fracture that

affects the superior extremity of the humerus, fracture through the line of the epiphysis? Our author has evidently fallen into the common error of confounding together fracture through the anatomical neck, and fracture through or near to the junction of the epiphysis with the shaft of the bone,—an error which has been so clearly exposed in Professor Smith's work. Fracture through the anatomical neck of the humerus is a rare accident: and it appears to us physically impossible that it can occur except as the result of powerful direct violence; whereas fracture through or near to the line of the epiphysis is far from being uncommon, and may take place from a very moderate amount of indirect force. An excellent representation of this latter fracture is to be met with in Professor Smith's work, and in an article recently published by Mr. Adams in the Cyclopædia of Anatomy and Physiology.

Fractures of the cervix femoris are divided into three classes:

"1st. Intra-capsular transverse fracture, so named from its being within the capsular ligament, and nearly forming a right angle with the long axis of the neck of the femur.

"2nd. Extra-capsular transverse fracture, when the fracture is without the capsular ligament, and the neck is broken off at its junction with the trochanter major.

"3rd. Oblique fracture of the neck, extending through the trochanter major. This fracture may be partly within, and partly without the capsular ligament."

In speaking of eversion of the foot in intracapsular fracture, he says:—

"In addition to the tensor vaginæ femoris and anterior parts of glutæus medius and minimus, the two ischio-tibial muscles, namely, the semi-tendinosus and semi-membranosus muscles, should be enumerated as rotators inwards. When the foot is advanced, they prevent the heel from being so much turned inwards as to obstruct the other foot; but since they are more relaxed than usual by the shortening of the extremity, they can in this fracture have no effect in counteracting the powerful rotators outwards. Eversion does not take place to its full extent for some hours, as the contraction of the muscles is gradual."

Again he remarks, "although eversion is the usual position of the foot in fracture of the neck of the thigh bone, it is necessary to remember that inversion is occasionally found."

"As to the occasional occurrence of inversion, there is now no

doubt, but much difference of opinion exists as to its cause. Some have supposed that the capsular ligament remaining entire in the front of the joint, and retaining an attachment to the bone beyond the fracture, might cause inversion; but although this condition might possibly prevent eversion, and even that is doubtful, it could have no effect in causing inversion. Others agree with Baron Dupuytren, who attributes the direction of the foot in every fracture of the neck to the relative positions of the fractured portions; and if this explanation be not correct, the cause of inversion in fracture, entirely within the capsular ligament, remains still undiscovered. Mr. Guthrie has explained, in a most satisfactory manner, the cause of inversion in some fractures, without the capsular ligament. If the fracture be so situated, that the attachments of the rotators outwards, inserted into the digital cavity, are connected with the fragment between the fracture and the joint, and the attachments of the anterior fibres of the glutæus medius and minimus to the anterior part of the trochanter major, are connected with the bone beyond the fracture, then the anterior fibres of these muscles will produce rotation inwards. This explanation, however, though most satisfactory in certain fractures without the capsular ligament, will not apply to fractures entirely within it."

Here we shall only ask, why is there no mention made of impacted fracture of the neck of the thigh bone?

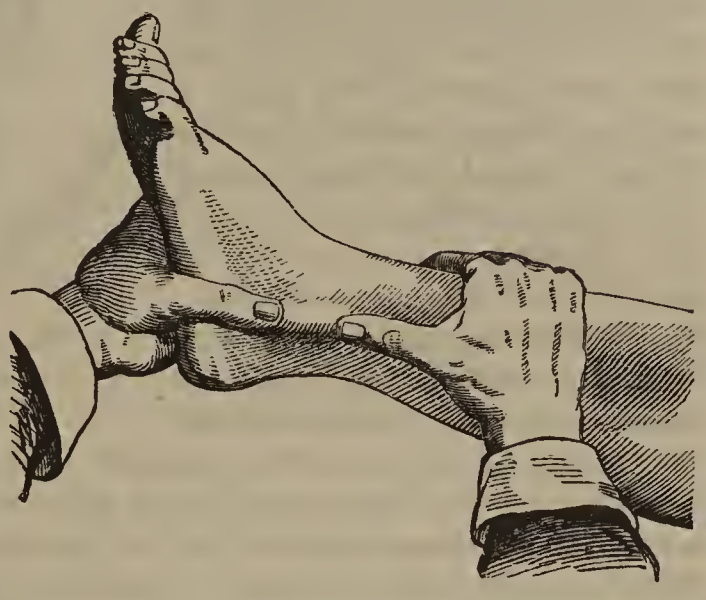
Fracture of the lower extremity of the fibula our author says, "is easily discovered."

"Fracture of the lower part of the fibula is easily discovered. In addition to the presumptive signs of fracture, the nature of the injury is manifested by an inequality of the bone at the broken part, and unnatural mobility of some portion of the lower end of the fibula; crepitus, perceptible on grasping the leg with one hand, and pressing the foot inwards and outwards with the other; an angular depression at the situation of the fracture; distortion, with some unnatural mobility of the foot from side to side, and a change in the point of incidence of the axis of the limb upon the foot. Many of these symptoms disappear, when reduction is effected by force applied to the foot, but they return when the force is discontinued."

We cannot agree with him, that fracture of the fibula is always easy of discovery; the diagnosis is sometimes most difficult, and numberless are the instances of permanent lameness from a want of recognising this lesion. And here we may notice "a new means of diagnosis in fracture of the fibula above the malleolus," by M. Maisonneuve[a].

[a] Bulletin Thérapeutique, vol. xl. p. 128.

"With the four fingers of the left hand," says he, "if it is the left leg we have to deal with, we embrace the anterior and internal surface of the tibia, so that the thumb of the same hand may be applied firmly upon the posterior edge of the fibula, a little above the external malleolus. With the four fingers of the right hand we embrace the sole of the foot, so that the thumb of the same hand may be applied on the most projecting part of the internal malleolus; then, by alternately exerting firm pressure with both thumbs, the following sensation will be experienced. At the moment when the right thumb presses on the malleolus, the left thumb perceives the upper surface of the lower extremity, which is pushed out, so that its form and direction can be easily recognised. When, on the contrary, ceasing the pressure on the malleolus, we press with the upper thumb, the extremity of the fragment returns to its place, and the projection is not to be perceived; it is then by moving the lower fragment to and fro, by means of a gentle pressure, that the mobility and the abnormal projection are to be detected. Experience has proved to me that we can thus distinguish, without difficulty, fractures by divulsion of the lower end of the fibula.



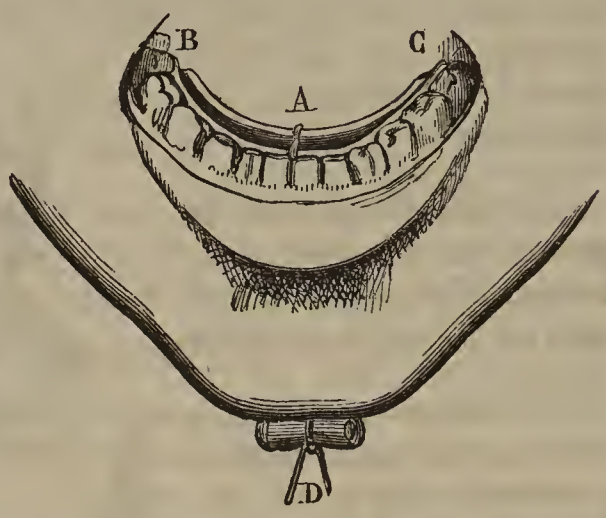
"Some may, perhaps, imagine that the *manœuvre* which I describe is nothing more than that commonly employed for the detection of mobility in all fractures, and especially that indicated by Dupuytren for fracture of the fibula. But this is not the case. In ordinary fractures, in fact, and according to Dupuytren's special directions for fractured fibula, we try to detect mobility and crepitation by pressing alternately upon the upper and lower fragment; while in the manœuvre which I recommend, it is upon the two ends of the lower fragment solely that pressure should be exercised."

Why Mr. Pirrie makes no allusion to fracture of the lower jaw we cannot understand; does he imagine that it is unnecessary for the student to be acquainted with this lesion?

In the forty-second volume of the Bulletin Thérapeutique[a], "a new method of treatment for fractures of the alveolar portion of the lower jaw," is described by M. Robert, and to it we would direct especial attention.

[b] Page 24.

"A piece of lead, half a line in thickness, is to be moulded exactly upon the lingual border of the maxillary bone A, extending backwards beyond the osseous fragments B C. To retain this plate in its place a needle, armed with a silver thread, should be passed along the internal surface of the maxilla, through the floor of the mouth, and drawn outwards; the other extremity of the thread, conducted in a similar manner along the external surface of the bone, should be brought out through the same orifice[a]. The two ends of the thread thus drawn out under the chin, embracing the fragments in the loop which they form, are to be fastened round a small roll of adhesive plaster, D, and twisted until the plate B C is firmly fixed."



In a note, M. Debout recommends the substitution of zinc or silver for lead, fearing that ill consequences might result from the retention of the latter metal in the mouth for the time that would be necessarily required. Neither of these metals, however, could be so easily moulded to the proper shape as lead.

In treating of dislocations Mr. Pirrie draws largely upon Sir Astley Cooper, and introduces many copies of the illustration of the different dislocations, and their mode of reduction, to be found in his valuable work; the student may glean much useful information in a small compass in this part of our author's volume.

Now, of all the dislocations which occur, there is none to which more attention has been paid, in consequence of the extreme difficulty of reducing it, than dislocation of the first phalanx of the thumb backwards upon the metacarpal bone. Numerous have been the methods devised in order to effect the reduction of this dislocation, which, in cases of any length of standing, often proves perfectly invincible. Mr. Pirrie says:—

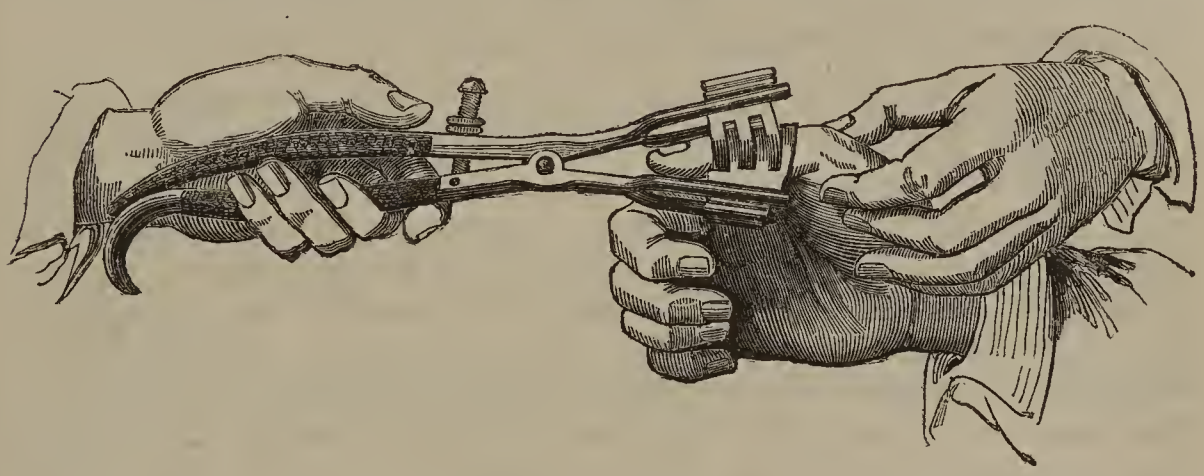
"The proposal has been suggested of dividing one of the lateral ligaments with a couching needle, or a very small knife, when reduction is impossible by ordinary means. The best authorities, in general, unite in condemning this practice on account of the fre-

[a] "The engraver has committed an error in the adjoining drawing; the anterior portion of the metallic loop should be represented as passing in front of the incisor teeth."

quency with which tetanus is induced by injuries of tendons and ligaments connected with the thumb. Mr. Syme, however, says:— 'In cases where the difficulty proves insuperable, one of the lateral ligaments may be cut, which would certainly be better than leaving the bone unreduced, as has sometimes been the case.' "

In the forty-first volume of the French Journal[a] already quoted, some very excellent remarks by M. Demarquay upon dislocation of the thumb backwards, together with a new method of reduction, are contained:—

"If the cause of the irreducibility," says he, "depends neither on the persistence of the lateral ligaments, nor the intervention of the anterior ligament, it must exist in the muscular plexus which clasps the head of the metacarpal bone; traction of the thumb, and propulsion of it forwards, as recommended by M. Gerdy, tend only to fix it more and more firmly, and, to overcome this resistance, great force is requisite, and even this is not certain of being successful. What is necessary is to disengage the head of the bone from the muscular plexus, in which it is, as it were, intertwined, and this not by cutting the outer portion of these muscles, as first proposed by M. Malgaigne, whether including the skin in the section, or by the subcutaneous method as proposed by M. Biechy. By the following process the head of the metacarpal bone can be readily disengaged, and the dislocated thumb reduced. The hand and fore-arm being placed between pronation and supination, the surgeon seizes the extremity of the thumb with the 'reducing forceps'[b] held in his right hand, and exerts traction in the direction of its axis. With the



thumb or the forefinger of his left hand he pushes backwards the head of the metacarpal bone projecting into the palm of the hand. After exerting a certain amount of traction, he works with a rotatory movement from within, thus causing the muscular fasciculus which forms the external part of the plexus to glide over it, and thereby to remove them from before the head of the bone, and pre-

[a] Page 495. [b] See the tenth volume of our present Series, page 118.

vent them from interfering with the further steps of the operator. The surgeon then continues the traction, and when the phalanx has arrived on a level with the head of the metacarpus he makes a sudden movement of flexion, and the reduction takes place."

Passing over the subjects of affections of the osseous system, diseases of the joints, and curvature of the spine, we will dwell for a few moments on Mr. Pirrie's observations on diseases of the arteries. Aneurism has ever been looked upon as particularly worthy of the attention both of the physician and the surgeon; its pathology is most interesting; its treatment, both medical and surgical, highly scientific, and its nature or character more varied than that of almost any other disease we have to study. Hence, much has been written, from time to time, upon the subject of aneurisms, but, in consequence of the matter being diffused so widely through a multiplicity of books, the student cannot be expected to acquire as much knowledge of this disease as its importance demands. Our author, we are happy to perceive, has done justice to this important department of surgery, and has furnished the student with a short, but very clear and satisfactory and well-arranged account of the disease, its mode of formation, its varieties, its consequences, and its treatment. We are, moreover, glad to find that the author deals fairly with the question of pressure as a means of cure in aneurism, and accords to it that value which it so justly deserves, but which, nevertheless, is denied to it by a few, in the face of the most weighty statistical proof that need be adduced:

"The treatment of aneurism by pressure has lately been revived, but on new and improved principles; and the new mode of employing it has been attended with so great success, that it may now be said to be completely established. The ultimate object aimed at being the consolidation of the contents of the aneurismal sac, its attainment is sought by weakening the force of the circulation through the aneurism; and for this purpose pressure is applied to the artery leading to the aneurism, at a considerable distance from the tumour, and employed to an extent only to weaken the force of the circulation, and not to produce obliteration of the artery. As this does not require severe pressure, the objections made to the former mode of treatment—that it was impracticable on account of the pain, and that the pressure often gave rise to severe and dangerous local results, cannot be urged against the method which is now employed."

Diseases of the veins also form an extremely important subject for study,—one, too, which has been very culpably neglected. No doubt, much difficulty attends the investigation,

but this is a reason why we should labour with the greater energy to surmount it, and to disperse the obscurity which overhangs the subject. Phlebitis is the most fearful disease with which the practitioner has to contend; it is the surgeon's chief scourge, meeting him often at every path, frustrating his best-planned operative undertakings, and itself resisting every plan of treatment that can be devised to make it yield, or even to mitigate its symptoms. A surgeon performs an amputation under, perhaps, the most favourable circumstances; or he excises a tumour which has been a source of inconvenience for years; or he redresses some deformity of the most disfiguring nature, of which the sufferer from it is most anxious to be rid; everything goes on well for a few days, affording the strongest encouragement to both patient and operator, when about the eighth or tenth day a violent rigor supervenes, phlebitis sets in, and sinking rapidly ensues. Is not such a malady well worthy of close investigation? Still, we are utterly in the dark regarding many most important particulars connected therewith. Mr. Pirrie has collected nearly all that is known upon this disease, especially the "diffuse suppurative phlebitis;" and a great deal of information may be obtained from this chapter, short though it be.

"The sequelæ which have their seat in the capillary system consist of lesions which have been designated by the appellations 'lobular inflammations' and 'lobular abscesses.' These secondary infiltrations are most commonly found in the lungs and liver, especially in the former; they usually present themselves in the form of deposits disseminated through the parenchyma of those viscera, and differ from abscesses in being neither encysted nor concentrated into one place."

We must say, however, that we have as often found the secondary purulent deposits in the lungs perfectly encysted as infiltrated.

After pointing out the manner in which the phlebitic abscesses in the lungs and liver can be accounted for, the author proceeds:

"The origin, however, of purulent collections in other organs still remains obscure. Here, indeed, the above explanation is inapplicable, founded, as it is, upon the inability of the pus-globules to permeate the minute capillary vessels of the lungs. Günther found that these deposits were formed *subsequently* to those in the lungs, and believed that they originated from pus being taken up from the diseased parts of the lungs by the pulmonary veins, and thus carried into the greater circulation. Were this explanation

correct, phlebitic abscesses must, necessarily, exist in the lungs, wherever such deposits are found in the capillary system of the greater circulation. To ascertain this, I have compared a large number of cases, observed partly by Balling, Dance, Arnott, and others; partly by myself. Amongst them, however, there are only two (one related by Sasse, of purulent deposits in the liver, and one by Dance, of purulent exudation within the wrist-joint), in which the non-existence of pulmonary abscesses is established by careful examination after death."

Next comes the subject of hernia. The author gives the following important considerations upon the operation for strangulated hernia in general, and in the sentiments expressed upon each of the heads we fully concur:

"1. The circumstances under which it is justifiable or necessary to resort to the operation;—2nd. The importance of having recourse to operation at an early period, and of abstaining from handling the hernia before the operation, more than is necessary for the fair and skilful use of the taxis, while the patient is under the influence of the most powerful auxiliary—chloroform;—3rd. The indications which are to be fulfilled by the operation;—4th. The conditions which render it impossible, and those which make it improper, to return the hernial contents;—5th. The mode of procedure in regard to the hernial sac;—6th. The anatomy and treatment of abnormal or artificial anus;—and 7th. The treatment after operation."

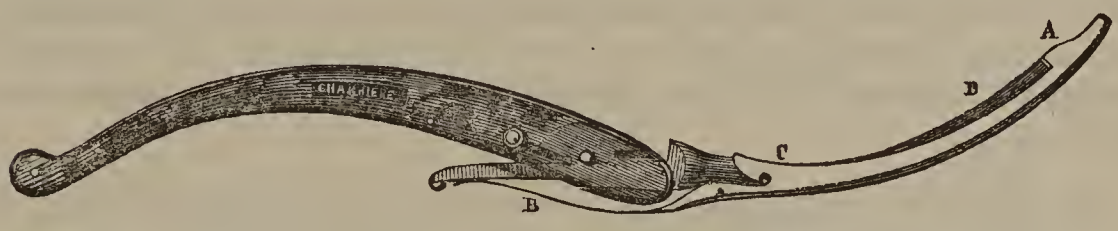
In speaking of the fifth consideration, "the mode of procedure with regard to the hernial sac," he says:

"It is a question of great importance, in reference to the operation for strangulated hernia, which of the two following modes of proceeding in regard to the hernial sac is the more advisable; namely, that of opening the sac, and dividing the stricture from within; or that of dividing the stricture, and replacing the parts without opening the sac. Of these two, technically called the *intra-peritoneal* and *extra-peritoneal* modes of division the former is that which, except in a limited number of cases, has received the sanction and adoption of most surgical authorities in these islands. It appears certain that, in the great majority of cases, it is by that mode alone, that it is possible to accomplish the two grand indications which it is desirable to fulfil by the operation; namely, the removal of the pressure by division of the stricture, and the return of the hernia. The fulfilment of the former, namely the removal of the pressure by division of the stricture, is essential to the safety of the patient; and that of the latter, the return of the hernia, exceedingly desirable when practicable and proper."

We entirely agree in the advisability of opening the sac in every instance. Perhaps in the case of an intestine which has

suddenly protruded for the first time, if we operate shortly after symptoms of strangulation have appeared, it may not be unobjectionable to divide the stricture outside the neck of the sac, and not to open the latter, but in no other instance, in our judgment, ought such a plan to be followed. We are aware that very high authorities, even at the present day, advocate the advantage of following Petit's method of operating, but we feel perfectly convinced that their adhesion to it arises from a false view they take of the effects of opening the sac. In truth, the risk of peritonitis springs not from it, but from delaying the operation too long. In strangulated hernia, the operation cannot be performed too early.

The knife in general use for dividing the stricture in hernia is that recommended by Sir A. Cooper, and of which a representation is given by Mr. Pirrie. The annexed woodcut, taken from the Bulletin de Thérapeutique[a], displays a



bistoury, the invention of M. Grzymala, and which is said to possess two advantages over Sir A. Cooper's, viz., a wider cutting edge, and perfect safety as regards the intestine in dividing the stricture. For our part we prefer Cooper's knife, and if properly managed, it is as safe, and certainly more easily controlled, than any other. If we were inclined to abandon Cooper's bistoury, we have in Trant's knife every requirement for the safe division of the stricture; but we consider that no instrument which dispenses with the finger as its guide can offer the same advantages as those which Sir A. Cooper's knife affords.

The author makes the following classification of wounds of the abdomen, with a view towards the clearer explanation of the principles of their treatment:—

"1st. Wounds which simply penetrate the cavity without injuring any of its contents;—2ndly. Wounds which not only penetrate the cavity, but injure some of the contained viscera, without protrusion of the wounded part;—3rdly. Wounds attended with protrusion without any wound of the protruded part;—and, 4thly. Wounds accompanied not only with protrusion, but also with injury of the protruded part."

[a] Vol. xli. p. 116.

With respect to the second class he says:—

"Important indications are, to guard against all exciting causes of extravasation either of blood, or of visceral contents, and against all causes of inflammation; and if inflammation should occur, to endeavour to subdue it by proper treatment. It is, therefore, necessary to abstain from all imprudent exhibitions of stimuli for the removal of the collapse consequent on the injury, to preserve the body at perfect rest in the horizontal position, to enjoin the use of the mildest ingesta, and to abstain from the employment of purgatives, as being calculated, until the injury has been healed, to do harm not only because, by the irritation they produce, they increase the danger of the occurrence of inflammation, and its intensity when it does occur, but also, because by the additional peristaltic motion they increase the risk of extravasation of intestinal contents, and interfere with the process by which nature repairs the injury. These, with all the details of antiphlogistic regimen, constitute important parts of the preventive treatment; and when inflammation occurs, the remedies proper for that state must be promptly applied. If there be reason to suspect injury of the bladder, the catheter should be kept introduced to diminish the chances of extravasation of urine."

The author has, however, forgotten altogether to call attention to the most important practical point connected with the treatment of this particular class of wounds of the abdomen—the administration of opium. Many years ago Drs. Graves[a] and Stokes showed the great advantage of large doses of opium in rupture of the intestine from ulceration. Its utility in this respect is now universally admitted. But if opium be calculated to fulfil the required indication in ruptured intestine from ulceration, it is more especially suitable in wounds of that viscus, inflicted by a sharp instrument; for here, if the intestine can be maintained at perfect rest, completely motionless for some hours, nature may work the most salutary effects through the instrumentality of the adhesive process. The opium must be given in very large doses, in order to tranquillize, almost indeed to paralyze, the intestine; and thus, by arresting all peristaltic movements, to diminish the chance of extravasation of fæces occurring.

"The above are the proceedings which, on the whole, appear to be the most judicious in the treatment of the different varieties of wounds in the intestine, and they are recommended by the great majority of British authorities of the present day. They are very

[a] Graves' Clinical Medicine, by Neligan, vol. ii. p. 244; and Dublin Hospital Reports, vol. v.

different, however, from many of the singular modes of procedure adopted formerly by many surgeons, and still practised by some. In some cases, ligatures have been employed in great numbers; in others, sutures of every possible form have been used; most extensive wounds of the intestine have been sewed up, and replacement effected; in some instances, the ends of the ligatures have been cut off, the ligatures having been employed only for preserving apposition of the edges of the wound in the intestine; and in others, the ends have been left and kept in the external wound, the ligatures being used partly for procuring apposition of the edges of the wound of the intestine, and partly for keeping that wound near the external one."

As an example of the ingenuity displayed in stitching up wounds of the intestine, we may call attention to the subjoined woodcut, which represents the plan proposed by M. Bouisson of Montpellier for closing both longitudinal and transverse wounds of the intestine. The particulars of it are to be found in the fortieth volume of the Bulletin Thérapeutique[a].

"In longitudinal wounds (Fig. 1) slender pins of a length pro-

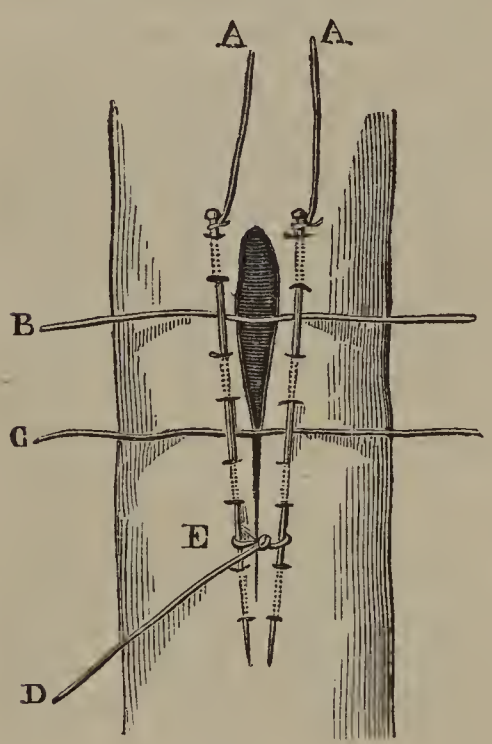


Fig. 1.

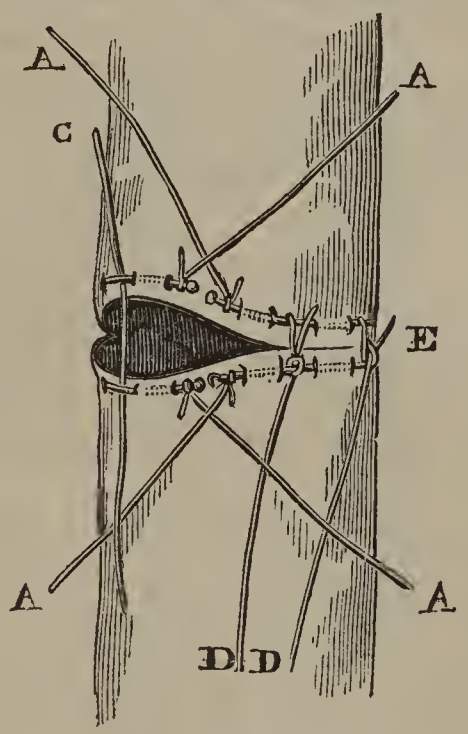


Fig. 2.

portioned to that of the wound, to which threads A A have been previously attached in order to enable them to be readily withdrawn, are inserted in the entire thickness of each lip of the wound, parallel to and about a line from it. The pins alternately transverse the serous and mucous coats, but in an undulating manner, so as to leave several corresponding portions free on both sides. The threads

[a] Page 157.

B C pass under the bridges thus formed, and are so arranged that the surgeon, by knotting their ends, can draw together the needles, and, consequently, the lips of the wound; in so doing he presses inwards with a probe the edges of the mucous surface, so that the serous membrane of the opposite lips of the wound may be in perfect apposition. No escape of the intestinal contents can then take place into the peritoneum. The threads attached to the needles are drawn out at the superior extremity of the abdominal opening, and the uniting threads as at D, one end being previously cut close to the knot E, and brought out at its inferior extremity. A simple modification of this plan, as shown in Fig. 2, adapts it for transverse wounds."

We are sorry to find that Mr. Pirrie affords so very little information upon the important subject of calculi in the bladder. A short but tolerably fair account of the different operations of lithotomy is given; but there is a woeful lack of information as regards lithotrity—an operation which is gaining ground every day, and with which, accordingly, the student should be fully acquainted.

Affections of the testis are also very quickly run over; and affections of the genito-urinary system, nearly the most extensive subject in surgery, receive a most summary disposal at the hands of our author. Positively, no regular description is given of stricture; its pathology and varieties are entirely overlooked; and the effects it produces upon other parts not even alluded to. As to diseases of the prostate gland, with the exception of a few lines upon inflammation of the organ in connexion with gonorrhœa, they are altogether unnoticed. Syphilis receives no greater favour from the pen of our author. Does Mr. Pirrie consider that the student need not be instructed upon these subjects?

The next part of the volume is the operative department, in which is given a short description of the different amputations, and of ligature of the principal arteries, illustrated by drawings, chiefly taken from Mr. Liston's excellent work. The student may here refresh his memory upon operative surgery with much advantage.

We then have an account of affections of the rectum, and a brief notice of diseases of the eye and lachrymal apparatus.

Affections of the nose and mouth are also shortly described; the pathology of the principal tumours is next given; and the volume closes with a few observations upon diseases of the breast.

We have now taken a rapid survey of Mr. Pirrie's work upon the Principles and Practice of Surgery. If we have some-

times criticised rather too severely, the author may feel confident that we make great allowances upon the ground of the impossibility of constructing a complete work upon surgery, and that we accord to him the full acknowledgement of having, as we before expressed it, furnished the students of his own class with a clear and concise account of many of the difficulties in surgery. It is because the volume has claims to merit in some respects, that we have been induced to take the author to task for those defects we exposed in many parts, and which have limited its utility.

We had marked many other illustrations for selection from the volumes of the Bulletin Thérapeutique enumerated at the head of this article, but the space already occupied with this review compels us to postpone their insertion in our pages until a future occasion.

Lectures on the Nature and Treatment of Fever. By D. J. CORRIGAN, M.D.T.C.D., M.R.I.A., &c., &c. Dublin: Fannin and Co. 1853. Royal 12mo, pp. 104.

THE application of auscultation to the diagnosis of diseases of the chest, availed of as regarded the lungs almost immediately on its discovery by Laennec, made much slower progress, and was for several years less directly of value, as an aid in the investigation of deranged conditions of the heart. Amongst the earlier labourers in this then comparatively neglected field of inquiry, two members of the Dublin School stand pre-eminently conspicuous, and to them the profession owes much of the precision in knowledge which has been attained by the use of the stethoscope in the examination of cardiac diseases. Of one of these physicians, Dr. William Stokes, we shall not here speak, as we expect to meet him very soon in his work on diseases of the organs of circulation, which we have reason to know will be immediately published; but of the labours of the other in this domain of pathology, a short notice may well precede our review of his clinical essay on Fever now before us.

Engaged actively in examining the connexion between the sounds of the heart and its physiological action, Dr. Corrigan's attention was especially directed to an organic disease of the circulatory system, then but very imperfectly understood; and if upon the value of his practical observations on it his fame alone depended, it would suffice to stamp him as a physician of original powers and of painstaking inquiry. In the thirty-seventh volume of the Edinburgh Medical and Surgical

Journal—for our own school did not at the time possess a literary representative—will be found his essay on "Permanent patency of the aortic valves," in which he pointed out the symptoms and physical signs attendant on the organic changes in the heart to which this result was due, and indicated the correct principles of treatment for its relief, which were at the time completely misunderstood. The physical signs, on the presence of which he contended the diagnosis should be based, are now too well understood, and their correctness too universally admitted and valued, to require that we should enumerate them here; but the following observations present so clearly the principles on which the treatment of the disease should be conducted, that we feel no apology is requisite for now reproducing them, premising that, at the time they were penned, the invariable rule of practice was to employ bleeding and debilitants in every case in which the heart was hypertrophied.

"No one thinks of directing measures to diminish hypertrophy of the muscular tissue of the stomach in narrowing of the pylorus from scirrhus, or of the bladder or rectum in stricture of the urethra or intestines. In these instances the hypertrophy is recognised as a provision of nature to make the power of the part equal to the obstacle it has to overcome; and yet this simple principle seems to have been entirely overlooked in diseases of the heart, as if this organ possessed muscular fibres of a different nature from other organs, or as if, in adapting itself to obstacles affecting its action, it follows laws different from other muscular parts. The consequence of the neglect of this principle has been that, too often, in the treatment of a valvular alteration in the heart, there has been a constant struggle between nature and medicine. Nature has been making the organ equal to its task; while medicine has been directed to counteract nature's efforts, and by weakening the organ to render it totally incapable of its task. The repeated bleedings, the starvings, the enforcement of debilitating measures, are totally unsuited to the disease we are considering. Instead of such treatment, the measures most beneficial are those which, by strengthening the general constitution, will give a proportionate degree of vigour to the muscular power of the heart, and thus enable it to carry on the circulation in the absence of that assistance which it ought to receive"[a].

Since the publication of the essay from which the foregoing extract is taken, and which we regard as classical in the medical literature of the present century, Dr. Corrigan has published

[a] Edinburgh Medical and Surgical Journal, vol. xxxvii. p. 240.

several valuable contributions to medicine in the pages of our former and of our present series, and in those of the London Medical Times and of the Dublin Hospital Gazette: the latter of which, during its short career, derived its chief excellence from his pen. Amongst other contributions of his were some Lectures on Fever: these, he now informs us in his Preface, are "re-arranged and enlarged into a continued and connected series" in the volume the title of which is prefixed to this notice; telling us, moreover, "that they are not intended to be a lengthened essay upon the subject, and ambition no farther than to present to the advanced student and junior practitioner an explanation of principles applied to the nature and treatment of fever, which have been deduced from long-continued and careful clinical study of the disease."

In the ten lectures of which the volume consists, we are presented, then, with a concise yet admirably practical essay on fever,—a disease for the observation of which no better field could be afforded than our metropolis, where it is always located, and where epidemic outbreaks of it frequently and with a certain degree of periodicity occur.

In the first lecture the author makes his declaration of faith as regards the nature of fever, avowing that he agrees with those who regard it as a *primary* disease, and not *secondary* or consequent on some local or structural lesion, ignoring altogether the so-called typhoid fever, which he describes in his tenth lecture as "follicular enteritis."

> "The conclusion, then, at which we must arrive is, that fever, or the aggregation of functional derangements, to which we give the name of fever, is not dependent on any structural lesion whatever. But if it be not dependent on any structural lesion,—if no structural lesion be necessarily present,—if even, more than this, death will take place without any structural lesion whatever, the conclusion is inevitable, that fever is to be considered as a primary disease of function, having an existence independent of, and capable of proving fatal without, any local or structural lesion.

In concluding his first lecture, Dr. Corrigan recognises the utility, for practical purposes, of the division of fevers with reference to the function chiefly affected; the simultaneous lesions of all the bodily functions constituting the component parts of an aggravated case; the vital function which is chiefly deranged "stamping the characteristic feature on the individual case," and thus acting as a guide to the treatment. This is a most important point to be remembered by the young practitioner, who is too apt to treat fever by its name, follow-

ing a routine plan in every case; and we are therefore well pleased to see that the author throughout the volume constantly dwells much upon it.

The second lecture treats concisely but clearly of the division of fever into two forms: inflammatory fever and typhus. The latter is described as presenting two well-marked forms or subdivisions; "the first when the attack sets in with a heavy congestive stage, somewhat resembling the cold stage of ague; the second when the onset of the fever is gradual or almost treacherous, its commencement being so insidious that there is often difficulty or an impossibility in saying at what precise time the fever commenced." The following is Dr. Corrigan's graphic description of the second form:—

"The second form of typhus fever might truly be called insidious fever. It is a form you should well remember. The first deviation from health is perhaps scarcely appreciable in most instances, and it is most often very difficult to define its commencement. The patient has been probably for many days, as he describes his state, merely ailing, and perhaps continues at his ordinary pursuits up to the moment of his seeking for advice, which is probably on the sixth or seventh day of fever, and even then he hardly believes himself ill, and only seeks assistance or consents to remain in bed at the urgent solicitation of his family, who remark that he looks heavy and ill. When questioned at this period, he says he only feels weak, and without appetite, and disinclined to leave the bed; and he attributes the flying pains, which he only mentions when questioned, to his remaining so long in bed. When such a patient is first seen there seems at first sight little to excite alarm. There are only the creeping pains in the back or limbs, or in both; there is perhaps no headach; the pulse is not above 88, and the tongue is only slightly coated and of a light grey colour: yet such a case will almost certainly be severe and continued, and in a few days more, life may be in a mere balance. Were it not for ample experience, it would be quite impossible to anticipate that in such cases as this described, the danger could soon be so urgent. This form of fever now described will, however, go on with increasing aggravation to the ninth or tenth day, when the patient may become delirious, and quickly afterwards, perhaps, comatose; or, remaining still without sleep, becomes most restless, the whole nervous system continuing in an uninterrupted state of agitation, resembling delirium tremens; the pulse rises in frequency, and sinks in strength; and the case becomes an accumulation of symptoms constituting the worst form of typhus fever. What is it that makes the danger so great in this form of fever? There is neither local lesion nor particular symptoms of great urgency for several days, but every vital function is more or less deranged, and although the derangement of each may be individually of no great degree, yet the aggregate amount, when

all are more or less affected, becomes at last sufficient to overpower the whole system, and to terminate life."

The question of crisis and critical days is next touched upon, the author avowing his disbelief in there being any *specific* days of the duration of the disease, which can be regarded as critical. The five following lectures are devoted to a general survey of fever viewed according to the predominant lesion in any special case, and the treatment requisite for each, in the following order:—First, Derangement of the cerebro-spinal functions. Second, Lesion of the function of nutrition, including assimilation, secretion, and excretion. Third, Lesion of the function of circulation. And—Fourth, Lesion of the respiratory function. Illustrative cases are constantly introduced throughout, so that the character of clinical instruction, and the benefits derivable therefrom, are well maintained in every page.

In the eighth lecture we are presented with a summary of the author's views of the general treatment of fever, what combinations of remedies may be required where several functions are simultaneously deranged, and how the treatment of special cases may vary, although the general principles which direct the treatment are fixed. The lecture, short though it is, abounds in valuable practical precepts. The following observations on the effect which the type of the fever has in modifying the treatment, are especially deserving of attention:

"We shall always at once discover the type if we carefully analyze the functions affected. The type will be determined by the function most affected; and local disease, should it arise, will most frequently occur in the organs principally connected with the performance of that vital function, whatever it may be. I think that the inference will now naturally occur, almost without observation on it, that you must not attach yourselves in practice to any particular dogma or line of treatment; but meet each lesion of function with its appropriate treatment; the principles that guide its application remaining steady, but the details necessarily varying; you must neither become exclusive adherents of treatment, by wine nor by bark, by bleeding nor sudorifics, by purgatives nor diuretics; but ever bear in mind, that each lesion of function has its own remedy, to be regulated in application and in degree by the lesion of function which it is intended to relieve. Guided by the same principles, recollect, that treatment is to be regulated not by the circumstance of its being the fifth, sixth, or tenth day of fever, but by the state of each particular function, day by day. Do not ask what is the day or stage of the fever on which any remedy is to be employed, but, what is the state of the function at the moment, to be combated at the particular time.

"One case of fever may require as much wine on the second day of its attack as another on the twentieth; and the bleeding or leeching that will not be borne in one case on the third day will benefit another after a lapse of many days."

The ninth lecture is devoted to a consideration of the complications and sequelæ of fever; and in the tenth and last lecture, as we before remarked, acute follicular enteritis—typhoid fever—is shortly noticed.

In our review of this volume we have attempted rather to indicate its contents than to criticise the matter or the manner thereof, for the views of a physician of the sound judgment and great practical experience of Dr. Corrigan are as much above the comment of the critic as they need not the support of his pen to enhance their value. Yet we must be permitted to express the gratification we feel at the publication of another of those valuable practical works for which the Irish school of medicine has become so celebrated, and to tell our readers that in Dr. Corrigan's Clinical Lectures on Fever, they will find a collection of aphorisms, a knowledge of which will relieve them from many a difficulty at the bedside of their patients.

Contributions to Obstetric Pathology and Practice. By James Y. Simpson, M. D., Professor of Midwifery in the University of Edinburgh. Part I. Edinburgh: Sutherland and Co. 1853. 8vo, pp. 80.

We are very glad that Professor Simpson has determined to reprint the more important of the papers with which he has, with so lavish a hand, enriched the pages of the Edinburgh Monthly Journal; for although most, if not all, of our readers are familiar with them, we are quite sure that they will rejoice to be able to obtain them in a separate form. Of the value of the present Part there can be no question. Many of the subjects are such as could only come under the observation of a physician in very extensive practice, and they are handled in a way that one of consummate ability only could treat them. Moreover, it is an additional pleasure to us that this Part can give rise to little or no controversy. Upon one of the subjects only has there been any dispute, and that subject we shall defer until we have an opportunity of entering fully upon it.

The first paper introduces the use of chloroform in infantile convulsions; and judging from its effects in puerperal con-

vulsions, and from the experience Dr. Simpson has here recorded, we have no doubt that it will be found a remedy of great value, especially, but not solely, in those which are sympathetic, after all sources of irritation have been removed. We can also confirm Dr. Simpson's statement of its great power in pertussis, from our own experience.

We think that the absence of pain and local distress in cancer uteri is far from uncommon. We could add several examples to the cases Dr. Simpson has given; in one, the lady, when dying, assured us that she had never suffered any pain at all.

The arrest of the usual diminution of the uterus after delivery, or its excess, is a very curious subject, which has not hitherto, so far as we know, been noticed. Why the ordinary contraction should not take place, it is difficult to discover; but the author states that in a lesser degree it is not uncommon, "especially when inflammatory or febrile action supervenes, and interferes with the phenomena of the puerperal state. It is often, for example, observable both during life and after death in women who are subjects of puerperal fever, pelvic cellulitis, and phlegmasia dolens. Chronic hypertrophy of the uterus, in any excessive degree, from morbidly retarded or arrested involution, is more rarely met with. I have sometimes, however, seen it ten or twelve weeks subsequent to delivery, in the form of an apparent tumour, twice or more the bulk of the normal uterus."

The opposite condition of the uterus is also of great interest. Dr. Simpson relates one very remarkable case in which it occurred after the patient had borne a child; and he mentions having seen many in which atrophy or an undeveloped condition of the uterus existed in connexion with amenorrhœa. In such cases it is probably a fair inference that the ovaries were equally undeveloped.

The essay on paracentesis in ovarian dropsy is of great value. Instead of the sitting posture, with a bandage encircling the abdomen, Dr. Simpson advises that the patient should lie on her side, right or left according to the ovary affected, with the abdomen overhanging the edge of the bed. In this position, he thinks a bandage unnecessary at the time, although it may be useful afterwards, particularly if the abdominal parietes be much relaxed. Whether the puncture be made through the linea alba or the linea semilunaris is, "perhaps, of little moment, provided only the trocar is introduced in a situation in which the fluctuation is very distinct, and the parietes of the cyst thin and equal, and in which, therefore, the

instrument easily reaches the cavity of the cyst." A very good summary of the risks and obstacles to the operator is appended, including some which have rarely been noticed before. Further on we find an exceedingly interesting chapter on inflammatory and non-inflammatory ruptures of ovarian cysts, with cases. We cannot resist giving the conclusions deducible from Dr. Simpson's experience on this important subject, although the quotation is somewhat long:—

"1. The cysts forming an ovarian dropsy occasionally rupture; first, from inflammatory effusion into and distention of their cavities; or, secondly (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter), they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

"2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous and generally fatal peritonitis.

"3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distention of its cavity, and the fluid effused into the sac of the peritoneum is consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

"4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged by this accident.

"5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

"6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

"Lastly, let me add, that as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases; and more particularly in instances in which the great bulk of the tumor is formed by one original large preponderating cyst, or by several cysts broken up and conjoined into one common cavity or cell."

The essay on albuminuria in puerperal and infantile convulsions contains some very interesting facts, and we are inclined to agree with the author's conclusion, that the con-

vulsions and albuminuria are both owing to a morbid condition of the blood. Dr. Simpson is the first, we believe, to record the detection of albumen in the urine of a child attacked with convulsions; and, as he suggests, it may perhaps be found to play an important part in the production of trismus nascentium and scleroma. In two cases of the latter disease, seen by the author, the urine was coagulable.

We should regret the necessity for this brief sketch of Dr. Simpson's *brochure*, were we not sure that its contents will soon be familiar to our readers, if they are not so already. Dr. Simpson has attained such eminence in his profession, and his experience is now so extensive, that whatever he writes will, we are certain, be received with respect and attention. We can assure such of our readers as need the assurance, that the First Part of, we hope, a very extended work will amply repay their most careful study.

On Lithotrity and Lithotomy. By William Coulson, Surgeon to St. Mary's Hospital. With numerous Woodcuts. London: Churchill. 1853. 8vo, pp. 388.

The excellent work of Mr. Coulson upon "Diseases of the Bladder," which we had recently the pleasure of reviewing[a], afforded a good guarantee that any addition which might be made to this subject from the same source would prove a valuable offering to the profession. The anticipations then entertained are now realized; for we consider that the present volume is by far the most complete monograph upon lithotrity and lithotomy that has yet been published, and supplies a desideratum long required. The subject of lithotrity is entered into at large, but clearly and concisely; so is that of lithotomy; and the two operations are contrasted in a fair and able manner.

For the sake of convenience the work may be divided into three principal parts:—1. Lithotrity; 2. Lithotomy; 3. The parallel between the two operations.

1. *Lithotrity.*—There is no surgical invention, the history of which is more curious and interesting than that of lithotrity; those who feel curiosity in tracing the progressive development of mechanical invention will have it largely gratified by studying the historical records of the operation for seizing and

[a] Vol. xiii. p. 388.

crushing calculi in the bladder. They may trace with interest the gradual improvements that have taken place in the mechanism of lithotritic instruments,—from the straight to the curved,—from the rude and clumsy apparatus of Gruithuisen to the simple and efficient lithotrite now in common use,—from the piercer to the percussor,—and from it to the screw, as a crushing force. We have then the various alterations in, and the additions to, the different instruments which have been in vogue at particular periods, thus forming a number of successive epochs which mark the history of the operation of lithotrity, and invest it with great interest.

Mr. Coulson's work opens with the history of lithotrity, and certainly the author has been particularly happy in the manner in which he has succeeded in condensing this part of the subject; thus giving, in a small compass, as much information upon it as can be required by the practitioner. In some more elaborate treatises into which we have looked, we have felt ourselves in a perfect labyrinth, confused with the complicated description of the different inventions, and the changes which have been effected in lithotritic instruments from time to time. Mr. Coulson has stripped the history of lithotrity of all difficulty and confusion, and in a few pages has described all the instruments that have been invented from the earliest to the present date, illustrating them by very beautifully executed woodcuts.

The next chapter describes the treatment preparatory to the operation of lithotrity; and here let us enforce upon those who undertake this operation the great necessity of strictly paying attention to all the particulars of this preliminary step. If they wish to be successful, and to defend lithotrity from the charges of those who are unfavourable to it, they must give full weight to the importance of preparatory treatment. Mr. Coulson says:—

> "If we examine the practice of the most successful lithotritist of the present day—one who has performed more than 600 operations—we can hardly attribute his unexampled success to any other cause than the great attention he bestows on these preparatory arrangements. Some surgeons may exceed him in manual dexterity, but none bestow so much care on the medical and accessory points of each case; and hence, I believe, the success of his practice."

This is the strongest argument that can be adduced in proof of the advantages of a proper regard to preliminary treatment. Indeed, from what we have ourselves witnessed, we feel certain that to a disregard of this measure is due the want

of success which attends the operation of lithotrity in a large number of instances.

The third chapter is occupied by an account of the steps of the operation itself. The author gives the following description of it:—

"We have now the instrument in the bladder. The next step is to seize the stone. This is easily done when the calculus is small, and the blades of the lithotrite large. The closed instrument is first directed towards the floor of the bladder, along which the curved part is made to pass, the point being gently turned, now to one side, now to another; as soon as the instrument touches one of the sides of the stone, the female branch is fixed, the male branch is slowly drawn back, and the instrument is cautiously inclined towards the calculus. Should any difficulty be experienced in seizing the stone, from depression of the floor of the bladder or other causes, then the blades are moved in a sweeping direction, with the convexity downwards, from before backwards, along the bas-fond and posterior surface of the bladder; they are then drawn back a little, and the convexity directed to the right or left side, each of which is explored in its turn; lastly, the point of the instrument is directed upwards and then downwards to the space immediately behind the prostate. The instrument should then be carefully rotated, in order to come in contact with the foreign body. This found, the blades of the lithotrite are cautiously opened, and the instrument is pressed on the stone laterally, after which the blades are closed with the same caution, every effort being made to seize the stone as much towards its centre as is possible. This is an affair of dexterity which practice and great tact alone can attain. It is of importance to remember that the female branch should be kept perfectly immovable while we are closing the instrument, otherwise we run the risk of displacing the stone, which generally lies against its ascending portion."

Further on the author remarks:—

"It is only in exceptional cases, and when the stone is both small and very friable, that we can expect to break it up at a single operation. The first sitting should also be short, about five or six minutes, and when the passage becomes accustomed to the instruments, or less irritable, the operation may be prolonged for ten minutes at a time. This is a rule from which M. Civiale never deviates, and his opinion in this matter deserves the greatest attention. From three to eight days should elapse between each operation, to allow the fragments to pass away with the urine, and any irritation which the operation may have excited to subside."

We fully agree in the latter sentiments. If for the perfect success of the operation a proper attention should be paid to

preparatory treatment, the final issue of the case mainly depends upon an observance of the precepts contained in the above quotation. We have learned from our own experience that many of the evil consequences of lithotrity result from an anxiety, upon the part of the operator, to abridge the tediousness of the case, by which he is tempted to leave too short an interval between each operation, and to prolong each sitting beyond the limits of prudence. If M. Civiale, whose success in lithotrity has been so extraordinary, "*never deviates*" from the rule above mentioned, it is censurable rashness in any one else to disregard the results of his experience, and to pursue an opposite course. The operation of lithotrity, it should be remembered even by its most ardent partisans, can never compete with lithotomy as a means of speedy, decisive, and permanent cure; its equality with, or superiority over, lithotomy rests altogether upon other grounds; it is the endeavour to effect by lithotrity what can never be done without risk, that has made it fail in so many instances, and has brought it into apparently deserved disrepute.

The fourth chapter gives an account of the after treatment and after symptoms of lithotrity, and the obstacles to the operation:—

"If we have any reason to suppose that the detritus of the first operation will not come away readily with the urine, we should at once proceed to promote their discharge. A full-sized metallic catheter, largely fissured on its sides near the beak, is to be passed into the bladder, and the fluid which had been injected during the operation is to be drawn off. A portion of the detritus will come away with this fluid. A few ounces of tepid water are now to be injected into the bladder, and then drawn off as before; and the injections may be repeated three or four times, until the patient complains of fatigue, or the fluid which escapes from the bladder ceases to contain any detritus."

We are aware that it is the usual custom after the operation to introduce a catheter, and to wash out the bladder, but we doubt much if it be a wise method to adopt. The introduction of so large a catheter, and particularly the repeated injection of the bladder, cannot fail to greatly increase the irritation which follows the operation, and greatly add to the patient's sufferings. If the calculus is very friable, and has been much broken up, it is advisable to introduce the catheter, and draw off the water that had been injected, and with it some of the detritus; but in many instances even this will not be required; we prefer, therefore, in general to allow the patient to expel the detritus without any artificial assistance. It

is only the very small fragments which can be removed by the catheter; and unless a very large quantity of the calculus be reduced at the one sitting, it is not likely that the neck of the bladder or the urethra will be blocked up with the detritus. We have never resorted to the method of washing out the bladder; and in some instances we have not even introduced the catheter, but have allowed the patient to empty the bladder himself after the operation, and we have never met with any unpleasant consequence therefrom; on the contrary, we have thought that the subsequent irritation was much less from not adopting the usual course. The accident, too, which Mr. Coulson mentions as likely to occur—the impaction of a fragment in the eye of the catheter—is another objection to the same procedure. The author certainly would appear to approve of the method only conditionally, for he says—"If we have reason to suppose that the detritus will not come away readily with the urine:" but how are we to know beforehand in what case it will come away readily, and in what this is not to be expected?

The obstacles to the operation of lithotrity are numerous, and are well worthy of particular attention by those who undertake it; they are all pointed out in the latter part of the chapter at present under notice.

"The obstacles to the ready performance of the operation naturally come first. What are these? On what do they mainly depend? We can anticipate many of them by simply reflecting on the nature of the operation, and the conditions necessary for its successful performance. Lithotrity, in fact, is made up of the introduction of instruments of a certain size and shape through the urethra into the bladder; of the seizing in that organ bodies of various sizes; and lastly, of working the instruments in such a manner as to break up the foreign body, and allow of its discharge through the urethra. Hence everything becomes an obstacle which impedes the introduction of the instrument, its seizing the stone, its working in the bladder. Let us follow these three divisions in their order."

The accidents of lithotrity occupy the fifth and sixth chapters. Mr. Coulson enters largely into this subject, and gives much valuable information upon it. He divides the accidents into the "real" and the "presumed," thus drawing a very important distinction between the accidents which are the natural consequence of the operation, and those which are in no way necessarily connected with it. We would direct especial attention to both these chapters.

But by far the most important practical point as regards lithotrity, consists in the indications and contra-indications of

the operation; and in order to render these the more clear, Mr. Coulson devotes the entire of the seventh chapter to a consideration of the "pathological effects of urinary calculi, the various effects produced by vesical calculi upon the urethra, prostate gland, bladder," &c., &c.

It is perfectly obvious that unless a proper selection of cases for lithotrity be made, uniform success cannot be attained. The surgeon, who is anxious to be a successful operator, takes care in all other instances to discard all cases which he thinks unsuited to operation;—and why should there be any exception to the same wise course in lithotrity? But there is no doubt that lithotrity is performed in the most indiscriminate manner, without the least regard to the particular circumstances of the case. The lithotomist, eager to maintain untarnished the reputation he has acquired, takes care to weigh well beforehand the chances of success in each case he undertakes; whereas the lithotritist too often takes no trouble about the selection or rejection of cases, as if success was a thing of certainty in all instances. If, however, we are to succeed with lithotrity fully and satisfactorily, we must as carefully examine into the fitness or unfitness of cases for it, as we should in lithotomy, or any other operation. Mr. Coulson says:—

> "The fact is, that most surgeons perform lithotomy sufficiently well, yet when they come to lithotrity, judgment and skill seem to have abandoned them. The dexterous lithotomist suddenly becomes a very indifferent lithotritist. An eminent hospital surgeon, who cut eighteen patients without losing one, could never perform lithotrity in a respectable manner."

This is certainly strange, nevertheless we believe it to be true. It is the natural tendency of the human mind that, when it becomes wedded to any particular thing, it embraces an innovation with great reluctance; the result is, that when the latter comes to be adopted, it is imperfectly accomplished, whatever it be. We observe this in many instances. The lithotomist, having practised the operation of lithotomy for years, having his hand "made up" (as the phrase is) to a particular manœuvre, and having won laurels by his skill, will naturally resort to lithotrity with reluctance and prejudice, and cannot be expected to acquire that degree of dexterity he exhibited in his favourite operation. He performs the operation clumsily, and it may be carelessly,—he is conscious of this, he sees that no *eclat* can be gained by it,—he, therefore, condemns the whole proceeding, and returns with renewed energy to advocate the operation by which he acquired his celebrity. It is not sur-

prising that a surgeon thus prejudiced, and performing the operation, should be extremely careless in the selection of the cases and all other circumstances necessary for success; but even the avowed supporters and favourers of lithotrity seldom pay sufficient attention to its indications and contra-indications. Our author enters minutely into the many contra-indications to lithotrity which are met with, showing the special manner in which each proves unfavourable; some rendering the operation physically impossible, others interfering with its easy performance,—some affecting its safety, others leading to fatal results.

The most important point connected with this part of the subject is, in our mind, the question as to how far renal disease is to be viewed as a contra-indication to lithotrity. There is much difference of opinion upon this head; Mr. Coulson says:—

"If we are to select lithotrity, it should, in my opinion, be only when the renal disease is not very far advanced, and where the condition of the bladder and nature of the calculus lead us to conclude that the operation may be completed within a short period."

We are inclined to go further than this, for we think that unless the organic disease of the kidneys has gone to a considerable extent, the operation is not altogether contra-indicated. Any renal complication renders the case unfavourable for lithotrity, but unless the disease is aggravated it does not forbid it. Under such circumstances, however, we resort to the operation, not with a view of effecting a permanent cure, but rather of giving temporary relief instead of abandoning the sufferer to the tortures of the calculus. And if no other contra-indication exists, if all other circumstances are favourable, we do not see how the operation can aggravate the renal complaint to any considerable extent, provided it be done carefully, gently, and with prudence.

So much for what we have termed the first part of Mr. Coulson's work.

2. *Lithotomy.*—The author divides this subject in the same systematic manner that he does lithotrity: first, the history of it; second, the description of the lateral operation; third, the obstacles, and fourth, the accidents of lithotomy; and discusses each in an equally clear and concise manner.

In describing the lateral operation he says:—

"I have had some—I may say, without presumption, a large—experience in lithotomy, and the result of my experience is, that the incision through the prostate should be free enough to allow of

the extraction of the stone without much violence, yet not too free, for fear of hemorrhage or infiltration of urine into the extra-aponeurotic cellular tissue. I am therefore an advocate for moderate incisions, followed by gentle dilatation during the extraction of the calculus."

Further he says:—

"A moderate incision, according to my meaning, is one which does not pass through the whole depth of the prostate, but leaves a few lines of that body, near its base, and the capsule, undivided."

We fully agree in considering it of great advantage to make the incision through the prostate sufficiently large for the extraction of the stone; but we would even go beyond the limit laid down by Mr. Coulson, and we think a free incision, provided it does not go into, or too much into the neck of the bladder, will rarely be productive of mischief. The question, of course, is one of degree, but we think we have seen as much, if not more, mischief done by adopting the opposite extreme, and not making the incision sufficiently free and proportionate to the size of the calculus to be removed. Experience has ratified what reflection might suggest, and much of the evils of lithotomy arise from repeated efforts at seizing the stone in the bladder, and from difficulty in extracting it. Those operations are, *cæteris paribus*, the most successful in which the patient is kept a short time upon the table, and in which the stone is easily caught and readily extracted. Some operators, in their timidity not to make the incision too large, actually do no more than nick the prostate gland, the consequence being that, when the forceps are introduced, the blades cannot be sufficiently divaricated; and if roughness be employed, the parts will be lacerated, which, with prolonged ineffectual poking the bladder, does an incalculable amount of injury.

From want of space we are reluctantly compelled to pass over, without special notice, the author's observations upon the obstacles to lithotomy, its accidents, and the causes of death arising from it; but we are anxious to direct the attention, particularly of the junior practitioner, to these most important points, and which will be found so systematically detailed in the volume before us.

3. *Parallel between Lithotrity and Lithotomy.*—This part of the work describes the advantages and disadvantages of each operation, where the one is superior to the other, the two being placed in contrast. Much of this may be drawn inferentially from what has gone before; the circumstances under which lithotomy is preferable to lithotrity

may, in a great measure, be learned from a consideration of the contra-indications of the latter operation. Where lithotrity is inadmissible, lithotomy can, in many instances, be adopted with perfect safety, and *vice versâ*. Still the great importance of the subject demands special attention; accordingly our author institutes a comparison between the two operations in the fullest manner, showing the objections to each individually, and those that are common to both. The manner in which this is done may be gathered from the following:—

"And here, at the commencement, I would observe that I do not propose comparing lithotomy and lithotrity in the abstract. I shall not attempt to determine whether lithotomy should exclude lithotrity, or *vice versâ;* whether the former be the general rule, and the latter only its exception."

The parallel is first drawn between lithotomy and lithotrity, as operative proceedings. He says:—

"To sum up, then, what has been said, and draw a parallel between the two methods considered merely as operative proceedings, I would conclude that in two out of the three parts into which each operation may be divided, lithotrity is superior to lithotomy.

"In the means of arriving at the bladder for ease, simplicity, and safety, the latter cannot bear a comparison with the former.

"For seizing the stone, lithotrity affords greater facilities.

"For the third step, which consists in its extraction, lithotomy is much superior to lithotrity."

In the next place the two operations are compared as to the accidents to which they give rise, and the cases to which they are respectively applicable:—

"In determining the propriety of applying lithotrity to any case, two main points are to be considered—viz., the nature of the calculus, and the condition of the urinary organs."

The author winds up this part of his volume with the following general conclusion:—

"I would therefore, in general terms, conclude that all calculous patients under the age of twenty-one should be cut; and that all adults, except those unfit for the operation, should be submitted to lithotrity."

Every candid person who has had experience in both operations will admit the truth of this conclusion. Lithotomy in the adult is not to be judged of as that in the child; the two cases differ materially, not only in the mere operative proceeding, but in the consequences of the operation. In the

child, lithotomy is simple and easy of performance, and the ratio of recoveries, as proved by statistics, is very considerable; whereas, in the adult, the operation is complicated and difficult, and the recoveries, compared with the deaths, exhibit a sad preponderance of the latter. In order to complete the parallel between lithotomy and lithotrity, Mr. Coulson devotes the last chapter of this useful volume to the statistics of the two operations, thus furnishing the best and truest means of arriving at their comparative merits and demerits.

Our review of Mr. Coulson's valuable work now terminates, and we know not which to admire most, the careful manner in which it has been put together, or the clear, concise, and candid mode in which each subject is dealt with; and we think we cannot give greater weight to the opinion already expressed than by warmly recommending it to all anxious to gain sound information upon two of the most important practical parts of surgery.

On the Pathology and Treatment of Hysteria. By R. B. Carter, M.R.C.S.E. London: Churchill. 1853. Royal 12mo, pp. 161.

In the Preface to his book Mr. Carter informs the profession that his object is to publish the views of the late Mr. Mackenzie, "who was extensively known by his successful treatment of the most inveterate hysterical disorders," and to whom the opinions advanced, respecting the primary and tertiary paroxysms, as well as treatment, are referred, the author reserving to himself the responsibility of the other parts of the work.

In the first chapter, proceeding to describe what he considers the true characteristics of hysteria, Mr. Carter inveighs against the practice of including under the title of hysterical affections a large number of symptoms referable to disease of the medulla spinalis or its membranes, to hypochondriasis, or to simple malingering, and at the same time expresses his hope that an attempt to rescue the disease from inexactness unparalleled in scientific phraseology will find favour in the eyes of his brethren. There is certainly nothing more desirable in medical writing than the employment of terms which admit of little doubt as to their signification, since in the technicalities with which many works abound the junior student more particularly finds unusual difficulties, and is thus too frequently discouraged from acquiring valuable information. It is equally

important to those more advanced, that in the recording medical experience disease be clearly defined, in order that all doubt should be removed from the minds of readers as to the particular affection treated of; and this is more immediately requisite in the description of nervous disorders, where, from the apparent identity of symptoms, affections differing "a priori" are likely to be confounded.

Premising that by hysteria it is intended to describe a disease which commences with a convulsive paroxysm of the kind commonly called hysterical, Mr. Carter enters on the consideration of the phases of its development in its simple, complicated, and tertiary forms; and maintains the necessity of the primary convulsion being considered as the one essential characteristic, the "fons et origo mali," all other phenomena manifested being non-essential and secondary. To prove this hypothesis, an inquiry is instituted into that mental state so often associated with the affection, when the question is propounded of the relation which exists between emotions and physical change.

In examining the psychical and physical action of emotions, attention is directed to the powerful influence which they exercise on both mind and body: the nature of emotions themselves is also investigated, when we find the author's views, which are most clearly expressed, to coincide with those entertained by Cullen, who has already particularized the nature of volitional emotions as opposed to those which may be considered as involuntary.

The author denies altogether the existence of an hysteric diathesis; on this point his views differ very materially from those of many eminent authorities; more especially we may mention Dr. Roberton[a], who observes, "we have reason to believe, that there is absolutely an hysteric constitution, or congenital predisposition to hysteria, as that there is a scrofulous constitution or congenital predisposition to scrofula; and, consequently, that none are liable to hysteria but only such as possess this constitution;" while Dr. Todd[b] in a recent able lecture states, "Hysteria, no doubt, occurs chiefly in persons who have a peculiar character of nervous system." For our own part, while we seek not to deny the possibility of instances occurring confirmatory of Mr. Carter's opinions, we may observe that in by far the greater majority of instances of this disease which experience suggests, the convulsive paroxysm appears

[a] Physiology and Diseases of Women and on Midwifery, p. 237.
[b] Clinical Lectures, Medical Times, January 1st, 1853.

to have been but the last link in a chain of phenomena which we have had little hesitation in pronouncing as hysterical.

Following the steps of the earlier writers (though we are aware that some of more modern date have, in a measure, adopted similar views), Mr. Carter attaches special importance to the sexual passion as being that which most predisposes to this disease. An attempt is made to institute an analogy between man and the brute creation:—it is presumed that among the latter, as each kind of feeling is invariably followed by its special and proper consequence, while no particular results ensue; such not being necessarily the case with women, chastity is a state of violence to nature, especially if the desires have been awakened, and the natural action of the inclinations being opposed becomes diverted into other channels, among the results of which he would include hysteria. "The sexual passion," he writes, "is more concerned than any other simple emotion, and perhaps as much as all others put together, in the production of the hysteric paroxysm."

We confess we were disappointed with these extreme opinions, and are little prepared to acquiesce in their justice, seeing that the impressions which they are calculated to convey, more particularly to the non-professional reader, are at variance with the experience of those who, without a theory to support, take a just and sufficiently comprehensive view of an affection whose diversity of symptoms, and uncertain pathology, together with the class of patients in which it is chiefly manifested, render it as deeply interesting a study as is presented in the whole range of medical inquiry. The connexion is as evident as unexplained between the organs of generation and the mind; we seek not for a moment to question the influence they reciprocally exercise in common with those other powerful sympathies which too frequently eventuate in such strange manifestations of disordered action as baffle the best physiologists to account for, and the most skilful practitioner to cure; at the same time, we can conceive no more fatal mistake than that mentioned by the able writer[a] from whom we have already quoted, "the common error of regarding one or more symptoms ordinarily present in a disease as essentially characteristic, and indicating its nature and origin."

Mr. Mackenzie, whose views as the basis of the present work we are thus canvassing, recognises in his opinions the "hysterica libidinosa" of some writers, and doubtless has been led to adopt them from his observation amongst patients of a

[a] Roberton.

particular class. We question much if they will meet generally with that approval which the care Mr. Carter has bestowed in recording them would merit. Doctrines almost similar, when advanced by M. Louyer Villermay, have been ably refuted by M. Georget, and rejected "as false in their principle, and immoral in their application;" whether they are identical with those entertained by the author, we are not in a position to say, as in the Preface to which we have alluded silence is preserved on this point.

In reference to the division of hysteria which is proposed, we quote from the author:—

"The word primary being reserved to express the paroxysms produced by some original and fresh emotion, to the action of which the system has not before been subjected, I propose to distinguish as secondary the attacks following the suggested or spontaneous remembrance of the emotions to which the primary fit has been due; and to call those tertiary that are designedly excited by the patient herself through the instrumentality of voluntary recollection, and with perfect knowledge of her own power to produce them."

This division into what we must consider as stages of the same disease, may, when feasible, be found of use as enabling the progress of the affection to be estimated; though practically speaking it is not, at all times, an easy matter to establish the differential diagnosis of each. The remarks on this point will be found of value, as also those useful hints for the efficient treatment of hysteria as it occurs in work-houses and large institutions, of whose efficacy, from observation, we do not entertain a doubt.

Under the head of "Moral state and motives," are supported the doctrines previously advanced, when the influence of the erotic passion is again advocated as producing more especially the secondary paroxysm; while the subjects of tertiary hysteria are divided into two classes; "The first comprises women whose sexual propensities have been disappointed, but whose lot in life may be in all respects desirable; and the second, those in whom some form of envy or discontent is the predominant feeling." However we may differ from the author on this point, we agree in his subsequent remarks, that it is "a trial for a plain girl who accompanies her pretty sisters to a ball, and spends her evening in seeing them dance, and the next day or two, in hearing them describe and discuss their various partners!" yet we should hope that such exciting causes of this affection are rare, except in those whose minds being badly regulated, require but slight incentives to

passion. In defence of the plain girls, as well as society, we may observe, occurrences of this nature are, as far as our observation extends, by no means frequent.

The remainder of this chapter is chiefly devoted to proving the assumed character of the hysteric paroxysm, and the morbid craving for sympathy which is present. It is, without doubt, a curious problem to solve,—what that moral state is which causes a patient to forego all rational enjoyment, and subject herself to treatment frequently of the most painful, and generally by no means of a pleasurable nature. Mr. Carter, like many who have written on this subject, has been satisfied with recording the fact, offering such an explanation as may be inferred from his preceding observations.

The fourth chapter is devoted to the consideration of the most important features of this Protean disease, or its complications, in which the author displays practical knowledge of the principles which regulate their development, and offers many valuable hints for their recognition; the hysterical affections of the uterus and ovaria in their moral as well as physical manifestations being fully appreciated, while in his allusions to the use and abuse of the speculum, the opinion of all enlightened professional men is truly re-echoed. The hypotheses of previous writers as to the pathology of this disease are ably reviewed, and the various doctrines which have at times been set forward classified and investigated: when the conclusion is arrived at, more from negative than other grounds, that the essential nature of the affection has not been satisfactorily expressed. In his inferences the author manifests such a desire for truth as will, we trust, lead him to modify those extreme views which, on the broad principles of medical philosophy, are to be considered as objectionable.

In the chapter devoted to the treatment, the general principles laid down accord with those which experience suggests; differing, however, as we do from the author on many important points, more especially as regards the physiology of the disease, we cannot acknowledge such principles of treatment as we conceive those particular views rather than observation have suggested; for instance, when speaking of the employment of combined moral and medicinal remedies, he adds:—

"But unless the patient is ready and willing to lend her own assistance, or unless the feeling aroused be of a very transient nature, none of these means will secure a very great success; and in cases where a secondary paroxysm has been produced by sexual feeling, most parents would do well to permit what they consider a 'mésalliance,' rather than to risk the chances of recovery."

Proceeding further we read:—

"The professional man must always make every communication, which either expresses or implies his view of the case, a matter of confidential and private conversation, and he must never allow the smallest hint of it to escape in the presence of the patient and other persons, in order that he may always have it in his power to use the threat of exposure, and to suggest to her how differently her family would look upon her, if they only knew what he could tell them; and not only should he observe this precaution, but he should also make a point of treating his patient with marked courtesy in the presence of strangers, in order that she may feel herself to be actually receiving all the respect and politeness due to the most exemplary of her sex, and that she may know herself to be so treated only upon the sufferance of her medical attendant."

In speaking of doubtful cases we find the following remarks:—

"Whatever decision the medical attendant may arrive at, he should judge and act entirely upon his own responsibility, because, to call in the aid of another opinion, however valuable it might be with reference to the particular question, would show, beyond a doubt, that he was really perplexed about the case."

With these quotations we conclude our notice; we cannot acquiesce in their sentiments, and altogether doubt their efficacy, believing hysteria to be essentially a nervous affection, capable of being induced by a great variety of causes, associated of necessity with no special lesion, though usually manifested by disturbance in the functions of one or more of the great nervous centres; and considering the many excellent works and papers on this subject with which the current medical literature abounds, as well as the deserved and high reputation of those authors, some of whom we have quoted, and to whose opinions those of Mr. Carter are directly opposed,—we have deemed it advisable in so important a matter to speak our sentiments through them, rather than give expression to our own opinion. The importance of the subject, rather than the extent of the volume, has led us thus far; and we shall only add, that as regards the views of Mr. Mackenzie, we have no doubt Mr. Carter's own observation will so modify them, that should his work be again presented to the profession, —the full responsibility devolving on himself,—the ability displayed in the present publication will insure a more valuable addition to the information we now possess on so important a disease.

Stricture of the Urethra; its Complications and Effects; with Practical Observations on its Causes, Symptoms, and Treatment; and on a safe and efficient Mode of Treating its more intractable Forms. By Robert Wade, F. R. C. S., &c. London: Churchill. 1853. 8vo, pp. 360.

In our ninth volume[a] we noticed the second edition of a former work, by the same author, on the "Curative Powers of Potassa Fusa in Strictures of the Urethra." In the Preface to the present publication Mr. Wade declares that:—

"The following pages are the result of a desire to produce a comprehensive treatise on stricture of the urethra, comprising its various complications and effects, and whilst I have introduced into this volume some of the more practical observations, including cases which appeared in my former publication on the subject, the utility of the work has been enhanced by quotations from writings of the most eminent authors on this class of diseases."

Encouraged by the tone of the Preface, we took up Mr. Wade's book with the expectation of finding in it a really comprehensive and practical work on strictures of the urethra,—a book, in fact, suited to both student and practitioner; but, after a careful perusal of its pages, we can only look on it as Mr. Wade's former work in another garb, for we find that more than one hundred pages of the book before us are devoted to Mr. Wade's favourite mode of treating certain forms of strictures of the urethra by potassa fusa, whilst many of the practical subjects connected with urethral obstructions have not been dealt with in that full and comprehensive manner which they are justly entitled to,—more especially in a volume aspiring to the character of a complete treatise on strictures of the urethra, and their various complications.

As the chief feature, then, of Mr. Wade's present publication consists in a reiteration of his continued reliance on the use of potassa fusa in certain forms of strictures of the urethra, and as we have already placed before the profession both Mr. Wade's views on the subject, and the powerful objections which experience, in other hands, has raised against the caustic method of treatment in this affection,—we deem it unnecessary to revert to them now again.

[a] Page 101.

The Dietetics of the Soul. By Ernest Von Feuchtersleben, M.D. London: Churchill. 1852. Foolscap 8vo, pp. 202.

A Commentary of Medical and Moral Life; or, Mind and the Emotions, considered in relation to Health, Disease, and Religion. By William Cooke, M.D., M.R.C.S. London: Churchill. 1852. Royal 12mo, pp. 304.

The inquiry into the nature and functions of the human mind is not confined to a solitary class of investigators,—the metaphysician, the jurist, the divine, and the physiologist, all claim their right to travel through this intellectual domain, and attempt to divide off portions for their respective uses. Some of its regions constitute a kind of commonage, or neutral ground, where all can meet; others are debateable land, the confines of which are yet unsettled; while far in the distance extends that *terra incognita*, vast and trackless, as yet untrodden by the philosopher, but containing mines of hidden wealth to repay future discovery.

The desire to widen the circle of human attainments, and to exchange incertitude for knowledge, is essential to the constitution of the mind, and every attempt in this direction merits attention. The physiologist and practical physician while contemplating the wondrous phenomena of animal organization interpret, as best as they can, the connexion it holds with mind. The former, regarding the nervous system as the chief basis of discovery, the "medius terminus" of the syllogism, explores its structure by every art which chemistry, histology, and experiment can suggest; the latter looks abroad on life as affected by disease, examines patiently each aberration from the ordinary track, to mark if it could suggest a guide to some way yet unfound. Thus the fancies of the hypochondriac, the dreams of the somnambulist, the delirium of fever, and the delusions of insanity, have all been skilfully analyzed for a clue to the mysterious union between matter and mind.

With two of these works on mental analysis we present our readers: one of them, entitled, "The Dietetics of the Soul"—"Zur Diætetik der Seele," by the Baron Ernst Von Feuchtersleben, Vice-Director of Medical Studies at Vienna, originally published in 1838, and so favourably received in Germany that it has passed through seven editions. The other publication is by Dr. W. Cooke, already before the medical public as the editor of Morgagni on the Seats and Causes of Diseases, and seemingly intended by him as a kind of comple-

ment to that work, in elucidating the mental, moral, and corporeal nature of man.

To the author of the first of these works, as a stranger, we feel bound in courtesy to accord precedence, and the more especially as he is no youthful aspirant in the field of medical literature, but of considerable reputation in Vienna. He is known in these countries for his work on Psychology, a translation of which, by Dr. Babington, of London, was published for the Sydenham Society in 1847. The title which he has chosen for his work, and which the English editor endeavours to justify, namely, "The Dietetics of the Soul," jars a little strangely on our ears, and we certainly give a preference to the term used by Dr. Babington, who translates it, "The Dietetics of the Mind." To our notions the culture of the "*soul*" appears the province of religion, and it has become so identified with man, viewed as a moral and responsible agent, that to use it out of that sense is likely in this country to create confusion. We are accustomed to look for the aliment which supplies the hunger and thirst of the soul, its cravings after happiness, its consolations under affliction, in religion, where alone it can be found.

The author, understanding by the "soul" that immaterial, imperishable essence which includes our intellectual and moral being, states that he has written his little work as a *fragmentary* contribution to ethics, and it partakes very much of that character. His object is to communicate "a knowledge of those means by which the soul is preserved in a state of health," and this state he conceives to be attainable, and capable of being formed into an art. By due culture such a degree of control may be obtained, he conceives, by the mind over the bodily organs, that the access of disease may be kept away; and he cites the rather *outrè* observation of an eminent authoress, that "persons can only become healthy by feeling the greatest disgust at illness, and placing implicit reliance on the axiom that health is most lovely and loveable." That this power of self-control is possible not only over a morbid state of the feelings, but over actual physical causes of disease, is a position he tries to support by an appeal to experience, and gives instances of various means which draw off the mind from dwelling on these morbid influences. Of these he mentions amusement and travelling,—"men seldom die upon a journey, or during their honeymoon." Duty and occupation are still more powerful means of diverting the mind from brooding over its sorrows. "Every physician can testify from his own experience that no-

thing but the conscientious fulfilment of his duties has on many occasions been able to dispel the cloud which obscured his social and bodily existence. Nay, he has felt that this very activity protected him from the dangers connected with the prosecution of his profession." A man of strong mind, by a powerful act of volition, has succeeded in effecting this same object. "I was unavoidably exposed," says Goëthe, "to the contagion of putrid fever, and I warded off the disease by a simple act of the will. The power of moral volition in such cases is incredible. It seems to pervade the whole body, and communicate a degree of energy which enables us to overcome all injurious influences. Fear is a state of weakness, during which we are easily conquered by an enemy." In Goëthe the power of volition was the more marked, as the absence of professional duty was wanting. Most medical men can recollect similar instances, and, on the other hand, of diseases produced by sudden fright, where the imagination yielded itself up a ready victim to the attack.

Besides the power of *resistance* to external influences which he believes that the spirit of man can acquire, he goes a step farther, and claims for it a power of active subjugation. He seems to fear to give his own ideas on this subject, but adopts, as expressive of them, a quotation which savours strongly of the cloudy mysticism for which the Germans are remarkable: —"May we not suppose that the mind, which is an excessively penetrating agent, exerts a certain influence on the external world, and has the power of impregnating the earth, wherever its manifestations are intensely active." In illustration of this theory it is asserted, that when we come within the reach of a good man the air and earth are made healthy, while proximity to a bad man becomes deadly, "causing the virtuous to shudder, and the weak to incline towards evil when they approach the spot." The place where a murder has been committed always smells of blood. That this feeling of aversion towards the scene of some terrible crime is commonly entertained is a matter of fact, but that it arises from physical influence hovering over the spot, and acting upon our corporeal and mental natures, appears the veriest superstition. Man regards the crime of murder with instinctive abhorrence, and whatever brings it forcibly before his thoughts, as the scene where it was committed must necessarily do, will always be repelled with dislike. Could we substantiate the theory, that by some undescribed *aura* the good man impresses those about him, and not by the force of his example, what a clue it would afford us through the devious labyrinth of life. Within the magic circle of his

influence, like that of the enchanter, no evil demon could penetrate, and we would have but to come within the physical area of goodness to be kept unharmed by sin. How we are besides to distinguish the truly good man,—the person who, like Cato, "maluit esse quam videri bonus,"—from the simulator, he does not say, but he suggests that a faculty of moral diagnosis is not impossible to be attained, as Dr. Haine, of Berlin, reached such an acme of physical penetration, that "he could distinguish the various eruptions of the skin by their odour alone"!

In the chapter headed, "Beauty the reflection of health," there are some observations well worthy of attention. It was a favourite notion of the celebrated Lavater that a visible harmony existed between moral and corporeal beauty, and moral and corporeal ugliness. It is not, however, to be understood that this refers to mere personal charms, which are evanescent with time, as, if so, it could not be borne out, for Socrates was well known for the *simious* expression of his countenance, and that monster of moral turpitude, Nero, was remarkable for personal attractions. True human beauty is "that all-penetrating spirit, unstained by the irrevocable influence of the passions." The body is the engine of which our passions are the springs. The human features which indicate beauty, or its opposite, in an individual, soon take their shape from those habits of feeling and willing which constitute character, from the often repeated movements of the voluntary muscles. "Every oft-repeated motion of the countenance, the smile or the tear, the writhing of pain, the sneer of mockery, the scowl of anger, each leaves behind it a track in which it works again and again, until a permanent mark is established in the muscles and cellular tissue of the face, and after a time in the more solid structures, perhaps even in the form of the skull itself." The faces of passionate men are more deeply wrinkled when they arrive at old age than the countenances of tranquil persons; the violent gestures in the former have left traces of their existence in the contraction of the skin. There is thus a difference in the aspect of old age; beauty remains to the "hoary head when found in the way of righteousness," so that "there is a bloom even in wrinkles,"—while the worn and haggard expression of old age, stained by guilt, or debased by passion, repels us with abhorrence. And the slow and almost invisible influence of nature in thus stamping the mind upon the face requires the marked consideration of parents, as it is commenced almost from birth. Harmony of expression thus shows a healthy state of body and soul, the true beauty, that of the spirit, rendering glorious its

earthly tabernacle. This is sometimes disturbed by pain, but in several of our painless diseases, as sometimes occurs in consumption, the face remains beautiful to the last.

The effects of imagination on health and disease forms one of the most interesting chapters of the book. "Imagination is that faculty which unites the material to the spiritual world, —a wondrous principle,—we scarcely know whether appertaining most to the soul or to the body, whether it rules us, or we rule it. It is peculiarly suited to act as the mediating agent between mind and body." This faculty is the source of both our pleasures and our pains; it gives their charm to our day visions and our night dreams, giving to "airy nothings a local habitation and a name." It is in this faculty "that most diseases of the mind have their origin." "How profound are the sufferings of those unhappy persons who allow their imaginations to become fixed upon some disease which threatens them, or from which they imagine they already suffer. Sooner or later it is sure to attack them." There are few medical men who have not met with examples of these injurious self-tormentors, and even the profession itself is not free from instances of it. Boerhaave's pupil is well known, who, during the course of lectures of his illustrious teacher, graduated through every phase of disease that was drawn before his mind, till his health began at length to give way. It has occurred to ourselves, after delivering to a class a lecture on disease of the heart, to be called upon to treat some visionary palpitation in a pupil, while imaginary consumption haunts many a young stethoscopist with terrors more formidable than the real malady. During the cholera an animated description of the symptoms generally gave rise to uncomfortable sensations in the abdomen, and in some, to the veritable disease. The startling accounts in newspapers were in general found so injurious in increasing the evil by alarming the public, that in many places the authorities suppressed the bulletins of daily deaths, so as to keep the public mind from injuring itself.

The author dwells at length on the well-known but important fact, that imagination acts as a curative agent as well as a destructive, and enlarges on the importance of educating and directing it aright. He gives some humorous instances of this, and the reader will readily call to mind similar cases. Dr. Macleod, of London, used to remark that some of his patients with imaginary ailments, whom he treated with bread pills, complained of the severity of their effect. Much of the influence of animal magnetism is explained by Dr. Holland in his interesting "Notes," as the force of imagination, and the

cures of homœopathy are produced by similar influences. The charlatan often effects the cure of a morbid feeling, by requiring absolute and unconditional obedience and faith from his patient. Every physician should endeavour by all honourable and rational means to secure the confidence of his patients; and none but they who have felt the soothing influence of a calm and self-possessed countenance, and the hopeful language of their physician, can tell the total change of feeling it effects when the mind is agitated by extreme apprehension.

We can only afford a few remarks more on the chapter on "Oscillation." Life, he observes, is made up of contrasts. In nature, the calm succeeds the storm; spring follows the sleep of winter. So in human existence, joy comes after sorrow, "like the alternate inspiration and expiration of the vital air." This succession of action and rest is true in both our ordinary and extraordinary habits. "He who crowds the labour of two days into one must pay the penalty by an extra day's inactivity," for Nature will not be hurried out of her course. Literary and professional men would do well to mark the truth of this axiom, as they often, by straining the bow too intently, destroy the elasticity of the string. This law of contrast pervades human existence; and the higher the excitement the deeper will be the subsequent depression—

> "Violent delights have violent ends,
> And in their triumph die, like fire and powder,
> Which, as they kiss, consume."

If pleasures were unmixed with regrets, it would be too much for our natures. Perpetual spring is the dream of the poet,—his "ver æternum" belongs to an imaginary land. And we are not without a degree of pleasure in thinking of our sorrows and trials,—like Shakespeare's honest Dogberry, each of us likes to speak of himself as one "that had his losses." Indeed, such is the strange inconsistency of the heart, that we look back on past pain often with more satisfaction than past pleasure. We must acknowledge the truth of that delicate alleviation of present sorrow used by the poet: "forsan et hæc meminisse juvabit." The struggle which has put our manhood to the trial is that we respect the most, as the general estimates that victory most which has cost him the greatest sacrifice.

We have thus attempted to give an account of the aim and the execution of this little work. It is not written to produce effect, but "has been conceived in the spirit of repose for self-cure and meditation." It would, however, be going too far to say that it is free from defect. Trite observations occasionally

are made to appear original, by being clothed in a harlequin dress; and some observations are so profound as to need an interpreter to explain their hidden meaning. It abounds, on the other hand, with striking thoughts, eminently suggestive. This code of dietetics for the treatment of mental diseases comprehends among its therapeutics the habits of self-knowledge and of general philanthropy, the love and study of nature, the importance of healthy occupation of body and mind, and the keeping ever before the mind the fulfilment of our duty. If it does not enter much into the province of religion, it seems at least free from the infidel theories which poison the productions of some of the most refined German philosophers.

We have been led so far in our remarks upon the preceding work, that we have but little space for an analysis of Dr. Cooke's volume on "Mind and the Emotions," and it is less necessary, as kindred subjects are treated of by both writers. The author appears a man of a benevolent and religious disposition; and in reading his pages it cannot escape us how, without trenching on the duties of the minister of religion, the physician may, in a moral and religious point of view, be eminently useful, and when he may administer consolation without stepping beyond the limits of his office. Yet we agree with that eminent and truly devout physician, the late Dr. Cheyne, of Dublin, that it should be done cautiously, as when the medical attendant speaks of preparation for a future state, it is generally understood by the patient as sounding the death-knell, and the faint hope of recovery which yet lingered in his heart becomes at once and for ever extinguished. The part of Dr. Cooke's work we like the least is his sketch of the anatomy of the human frame; it is too general for the medical student, while for the public it possesses little to recommend it, especially when we have such a beautiful model of what such popular sketches ought to be in the writings of Paley. The author has collected together a large fund of interesting matter on the passions and emotions as influencing and influenced by the body, and has enlivened his detail by numerous anecdotes of various interest collected from his own experience and that of others. While he does not reach the philosophic elevation of his German collaborateur, his work does not want practical sense, and will afford many valuable hints to the reader on subjects of which no one should be ignorant.

Histoire des Apothicaires chez les Principaux Peuples du Monde, depuis les temps les plus reculés jusqu' à nos jours, suivie du Tableau de l' État Actuel de la Pharmacie en Europe, en Asie, en Afrique, et en Amérique. Par A. Philippe, Docteur en Médecine, Chirurgien en Chef de l' Hôtel Dieu, &c., &c. Paris: A la Direction de Publicité Médicale. 1853. 8vo, pp. 452.

We were not a little surprised in taking up a volume, with the pretensions set forth in the above title, to find our existence almost completely ignored, and that while Sweden and Norway, united under one crown, and whose joint population but little exceeds two-thirds of that of Ireland, reduced as the latter has recently been by famine, pestilence, and emigration, have each their separate and distinct portion of the work, extending over several pages, assigned to them, the Emerald Isle is merely incidentally alluded to in three lines, under the head of "Angleterre." It is, no doubt, but too true that pharmacy, as a science, has been but little studied in this country, and we probably may not have sufficiently forced ourselves on the attention of the author, as discoverers in a field which has been so much enriched by the labours of his own countrymen; still, a writer professing, as M. Philippe in his Preface does, to have "collected the scattered fragments which, heretofore buried in isolated pages, or in a crowd of scientific collections, constituted all that was written of the history of apothecaries, resembling, in a word, a vast mutilated body, whose widely separated limbs lay here and there upon the soil; and to have made of them as compact a pile as possible, essaying, by an operation which has not been unattended with difficulties, to give them form and life;" should not have passed over in total silence the effort made some years since to sketch in the pages of this Journal the origin and progress of pharmacy in Ireland[a].

Should M. Philippe, however, plead ignorance of the existence of the paper we have just alluded to, we must observe, first, that it was his duty to have informed himself of all that had been published on the subject concerning which he was about to write; and secondly, that he is indebted for this ignorance to the system of medical plagiarism too prevalent in the present day; for M. Dorvault, in the "Revue Pharmaceutique de 1849," a work which is quoted by M. Philippe,

[a] See an Outline of the History of Pharmacy in Ireland, by William D. Moore, M. B., in vol. vi. of our present Series, p. 64.

presents his readers with an article entitled "Coup d' œil sur l' État de la Pharmacie dans les Temps Anciens," which is neither more nor less than a literal translation of eight or nine pages of the introductory portion of Dr. Moore's paper, and which, having been published by M. Dorvault without acknowledgment of the source from which it was derived, was reviewed as an original essay of his in the number of the "Journal de Médecine et de Chirurgie Pratiques" for March, 1850.

Having taken this, under the circumstances, necessary step of making our presence in the world known, we shall proceed, we can assure M. Philippe, to notice his work in as good a spirit as we should have done had he not ignored our existence. We shall, however, take it for granted that should his volume, as we hope it may, reach a second edition, he will assign us a niche in his historic temple.

The unbridled love of change, observes the author in his opening chapter, excited by the French Revolution of 1789, extended to the apothecary, and led him to reject the designation he had inherited from his ancestors in favour of the not less Grecian, but, in his opinion, less plebeian denomination of "pharmacien." We may observe, that in Britain also the title is likely soon to become extinct, the name "apothecary" being there in process of merging into that of general practitioner, while the preparation and composition of medicines are falling into the hands of the "pharmaceutical chemist." Having assigned some reasons for the preference given to the title of "pharmacien," the author observes, that "the educated man, who conscientiously practises his art, does not trouble himself to think whether he be called apothecary or pharmacien;" that "to obtain the respect which the profession procures when it is followed with talent and probity, is the sole object of his ambition."

In the three following chapters the origin and development of pharmacy are traced with great care and erudition, and its history is brought down from the earliest ages to the period of the appearance of apothecaries in France. In a notice like the present we can, of course, do little more than briefly touch upon the more salient points of this highly interesting portion of the work, referring our readers to the volume itself, in which they will find a rich variety of instructive lore, culled from the writings of a large number of ancient writers, both sacred and profane:—

"It is," observes the author, "universally admitted that the first seeds of pharmacy commenced to germinate under the genial

influence of the Eastern sun, in countries fertile in perfumes, sweet-scented plants, and fragrant resins; nor is there any doubt that the inhabitants of these favoured climes bequeathed to their posterity prescriptions by the aid of which they were enabled both to relieve pain and to allay the raging hallucinations of delirium; and that consequently they are entitled to be considered the fathers of the science.

"The only work, however, left by these people, which has braved the ravages of time, is one whose author was Chin-nong, Emperor of China. This monarch was, according to Cadet de Gassicourt, contemporary with Manès, first King of Egypt, but, according to Henri and Guibourt, he flourished six centuries before him. However this may be, Chin-nong died 2699 years before the birth of Christ, leaving an herbal which bears his name, and contains a detailed historic nomenclature of all the plants of the Celestial Empire."

But it is in Egypt that we must chiefly seek the dawn of pharmaceutic science. Isis is said to have discovered the salutary application of many drugs, and King Osmyndias placed over the entrance to the library of his immense and splendid palace of Thebes the words, "Pharmacy of the Soul," an expression evidently borrowed from pharmaceutic science, and metaphorically applied to the treasures contained in that rich collection for the relief of moral maladies.

Pliny, Clement of Alexandria, and Galen, mention several medicines as having been known to the Egyptians. Finally, the existence among them of the art of embalming proves that the properties of resins and essences were perfectly known to them.

Among the Jews, the Egyptians, the Babylonians, the Persians, the Macedonians, and the Greeks, as well as in the Esculapian Schools at Cos, Smyrna, and Alexandria, medicine, surgery, and pharmacy, formed but one profession; the same individual was physician, surgeon, and apothecary. Physicians were not the only class who practised pharmacy; patriarchs, prophets, princes, and kings themselves were skilled in it. In Persia, Cambyses prepared ointments and traded in them with the King of Egypt. "Alexander the Great also, King of the Macedonians," as Justin in his twelfth book relates, "was a great apothecary, and, by means of an herb he had discovered, cured Ptolemy, who had been dangerously wounded, and with the same herb he cured all who had been wounded in battle." Antiochus Philometer; Nicomedes, King of Bithynia; Attalus Philometer, King of Pergamos; and Mithridates Eupator, King of Pontus, were also versed in botany and pharmacy.

The author enumerates several writers on pharmacy whose

works perished in the destruction of the Alexandrian Library; describes the Empiric and Dogmatic Schools; and briefly gives the history of some female apothecaries, as Medea; Agnodice, the beautiful Athenian,—who disguised herself as a man in order to attend the lectures of Herophilus, and being accused by the physicians, who were jealous of her success, of introducing herself to women's houses in order to seduce them, proved her sex and so came off triumphant, and obtained for herself, and other ladies of that seat of civilization and learning, permission to practice medicine and pharmacy; Aspasia, who gave public lectures on botany; Artemisia, Queen of Caria, 380 years before Christ, who studied the secret virtues of plants and drugs, and gave her name to the *Artemisia vulgaris;* finally, the dazzling and magnificent Cleopatra, Queen of Egypt, to whom a work entitled, *De Medicamine Faciei*, has been attributed.

The author next proceeds to Rome, which had closed its gates against physicians during the first five or six centuries of its existence, and was equally for so long unprovided with apothecaries. After the establishment, in the capital of the world, of freedmen as physician apothecaries, so many accidents arose from their ignorance and negligence, that Sylla promulgated a law punishing these two crimes with deportation and death. A re-action took place, however, under Augustus, who, during a great famine, drove all the inhabitants from Rome with the exception of the physician-apothecaries, on whom he subsequently conferred the right of wearing the ring of gold, and raised a brazen statue to Antonius Musa his physician.

The apothecaries of Rome had numerous competitors in the *medicæ*, who devoted themselves to the treatment of female diseases, and the *sagæ* (the word *sage-femme* is derived from this), who composed and sold ointments, philters, and abortive potions. Not content with practising their execrable art, these women received a large revenue by the constant commission of the crime of infanticide.

We shall not follow the author through the "Greek and Arabic periods" which occupy his fourth chapter,—much of this portion of the history has already appeared in the pages of this Journal,—but shall pass to the appearance of apothecaries in France, where no notice of them is met with until the thirteenth century.

Pharmacy had now fallen from its high estate. No longer cultivated by kings and princes, its votaries, the apothecaries, were placed in France in the same rank as the grocers, druggists, and herbalists, and with them formed part of the corpo-

ration of grocers, which was the last of the four trades designated under the names of drapers, goldsmiths, furriers, and hosiers; but a little later the corporation of grocer-apothecaries attained the second rank, and was governed by six masters or wardens, who, like the judges and consuls of municipal towns, wore a robe of black cloth, bordered with velvet of the same colour, with cape and pendant sleeves. By a charter granted in 1312 by Philip le Bel, and confirmed in 1321 by Charles IV., they were styled *le commun des officiers marchands d'avoir des poids*[a]. This style was given them because the standard of the weights and measures of Paris was deposited in their custody. They had the right of inspecting the weights of all the other merchants, but were obliged to verify their own every six years by comparing them with the originals preserved under four keys at the mint, the making of which was attributed to Charlemagne. A banner and arms were granted to them, having a golden balance, with the motto, "Lances et pondera servant."

The grocers owed the importance they enjoyed in the middle ages to their selling drugs, spices, and sweetmeats, brought at a great expense from the East; the greatest mark of honour which could be paid to a guest was to offer him wine and spices.

When Louis XI., in 1467, being threatened with ruin in France by Edward of England, was obliged to form suddenly a civic guard, the corporation of apothecary-grocers was placed at the head of this militia, and ranged under the richest of the sixty-one banners set up by the trades of Paris.

In 1408, Prevot de Tours published his Pharmacopœia, the materials of which were borrowed from Mesué and Nicolas.

M. Philippe quotes several royal ordinances, from which it appears, that before the end of the fifteenth century a rigid examination of drugs had been established; the apothecaries had been subjected to the superintendence of the physicians, in order to secure the due observance of their prescriptions; visits of inspection had subsequently been organized for this pur-

[a] One would naturally suppose that the frequent occurrence of the above phrase in the charters and ordinances of the French kings led to the designation of the common system of weights by the term "Avoirdupois," now in common use. It is stated, however, in the Penny Cyclopedia, that *averdupois* is the more ancient mode of spelling the word, and that the obsolete French verb *averer*, and the middle Latin word *averare*, signify "to verify," and that it is more likely that we are to look here for the true etymology. It has also been supposed that the word is derived from averiā ponderis, *averia* and *avera* being words used for goods in general.—*Penny Cyclopœdia*, Art. AVOIRDUPOIS.

pose; the duration of apprenticeship had been fixed at four years; and the rules of admission had been settled.

The author devotes his sixth and seventh chapters to the history of the discovery of the syringe, and its results. Though we admit the value, "d'un coup de piston donné à propos," we are not inclined to join the author in comparing the importance of Signor Gatenaria's invention to that of the discoveries which have handed down the names of Gutenberg and Columbus, and we shall therefore pass over this portion of the volume, quoting only the statement, that at the commencement of the reign of Louis XIV., "les clystères furent tout à fait à la mode," that the "bienfaisant et modeste operateur" returned each morning carrying with him on an average the sum of six crowns, the proceeds of his matutinal visits—"C' était," adds M. Philippe, "le siecle d' or de l' apothicaire. *Quantum mutatus ab illo.*" At length, however, hurt by the railleries of Molière and the sneers of the public, and yielding to the evil suggestions of vanity, the apothecary suffered the instrument of his fortune to fall into the hands of the nursetender.

In 1514 Louis XII. separated the apothecary-grocers from the pure grocers. By a decree of the Parliament of Dijon, in 1599, wills made in favour of apothecaries were null. In 1595 apothecaries were forbidden by the Parliament of Paris to give medicine without the prescription of a physician.

The apothecary had a priority of claim before all the other creditors of a deceased insolvent for the medicines furnished during the last illness and of those which had preceded it, and his debt in other cases even took precedence of the widow's settlements.

The art of pharmacy felt the impulse given to letters by Francis I., and in consequence the number of pharmacopœias, dispensatories, and lexicons, suddenly increased, in an immense proportion, during the sixteenth century,

Military pharmacy, unknown to the ancients, commenced feebly among the Arabs, but did not reach any considerable development until long after the discovery of the New World. Fostered by several of the successive monarchs of France, it gradually gained a high degree of perfection, and the glory it acquired, during the wars of the Revolution, and of the Empire, is universally known. Finally, by virtue of a royal ordinance, in 1816, the equality of physicians, surgeons, and pharmaciens, was formally recognised; they had the same rights and prerogatives, and none could lay claim to any especial precedence.

By an ordinance of Louis XIII., dated 1638, an examina-

tion in the Latin Grammar was made a necessary preliminary to entrance on apprenticeship to an apothecary.

St. Nicholas was chosen as patron of the apothecaries, because the products they employ come by sea, under the guidance of pilots, of whom, likewise, Saint Nicholas is the patron.

The ninth chapter of M. Philippe's work concludes with a list of the pharmacopœias published in various parts of Europe, during the seventeenth century. The first Codex Parisiensis was published in 1639.

During 146 years there were constant quarrels between the physicians and the apothecaries. Their animosity was so great that the former attempted to reduce the latter to starvation by making their patients purchase their remedies from the grocers and the herbalists, and the apothecaries were obliged to yield to the demands of the physicians; among other things they submitted to inspection twice a year, by four doctors in medicine of the faculty of Paris; consented that the examination of candidates should take place in presence of deputies from the faculty, who were forced to prevent other than pharmaceutical questions being put; and became liable to penalties if they gave any medicine to patients without the prescription and advice of a physician of the faculty, or if they compounded the prescriptions of an empiric.

Besides the corporation, the "Royal Apothecaries" formed a body possessed of enormous privileges, which are detailed at the close of the tenth chapter.

In addition to the differences with the physicians, the apothecaries had long and serious disputes with the grocers, which were only terminated by the establishment, in 1777, of the College of Pharmacy, and the dissolution of the incongruous union between the two bodies.

Candidates for admission as apothecaries, having attained the age of twenty-five years, were obliged to furnish the College with an extract from the baptismal register, as well as with certificates of moral character, of sufficient knowledge of the Latin tongue, and of having studied under masters in pharmacy for eight years, of which at least four should be spent in Paris.

The examinations were held at furthest at intervals of a month;—the first was on the principles of the pharmaceutic art, and the application of these principles to operations; the second, on plants and simple drugs derived from the three kingdoms, and on the history, choice, nomenclature, preservation, &c., of the same; the third was to be practical, and was to last

three days, during which the candidate was obliged to perform publicly, without assistance, at least nine operations, according to the Codex. It was necessary that he should obtain, at each examination, the approval of two-thirds of the examiners before he could be admitted as master.

The College was obliged to open every year, for the instruction of the pupils, public and gratuitous courses of chemistry, pharmacy, botany, and natural history.

The formal installation of the College took place on the 30th of June, 1777.

The College of Pharmacy was the only learned body which passed unscathed through the Revolution; it remained erect in the midst of ruins; and while the country was rent by factions, and the monuments of genius were overturned, the pharmaciens of Paris assembled peaceably for scientific discussion.

It was, however, subsequently suppressed, and between it and the creation of the Schools of Pharmacy a Society was founded, and existed for some years under the name of "Société libre de Pharmacie de Paris," which reckoned among its members the most distinguished chemists of France,—Fourcroy, Vauquelin, Pia, Deyeux, Bayen, Parmentier, Baumè, Chaptal, Guyton de Morveau, &c. One or two prize questions were annually proposed by this Society, either for the improvement of analysis, or to excite to researches on products of which little was known, or for the amelioration of pharmaceutic processes. It was with this Society that the well-known "Journal de Pharmacie" originated.

Finally, the law of the 21st Germinal of the year XI., which created the present existing Schools of Pharmacy at Paris, Montpellier, and Strasburg, was promulgated. We have already extended this notice to such a length that we cannot follow the author through the history of these institutions given in his thirteenth and fourteenth chapters, neither can we enter on the consideration of his highly interesting essays on sacred pharmacy and on the pharmaco-poets; nor the instructive chapters on the history and present state of pharmacy in China, Persia, Turkey, Greece, Egypt, Russia, Sweden, Norway, Denmark, Germany, Austria, Prussia, the Netherlands, America, England, Spain, Italy, and the Kingdom of the two Sicilies;—for these and many valuable details contained in the portion of the work of which we have given a necessarily imperfect sketch, we must refer to the work itself, where a vast amount of information on these important topics is presented in a readable and agreeable shape. M. Philippe's volume is printed in a large, clear type, and on paper superior to that of the majority of continental publications.

We shall conclude our review with one or two remarks on the author's sketch of the state of pharmacy in England.

M. Philippe states, that of ten thousand individuals who vend medicines in the three United Kingdoms, three-fourths at least are unqualified persons, who only carry on business through the careless tolerance of the Government. Though there is probably considerable exaggeration in this statement, there is no doubt that the composition and sale of medicines by ignorant and unqualified persons prevails in these countries to a great extent, whether through the apathy of the bodies appointed to preside over pharmacy, or through defects in the laws they are bound to administer; but we agree with the author in thinking that a subject so intimately connected with the public health demands the special attention and surveillance of the Government.

Another subject which justly meets the reprobation of the author is the system of barefaced advertising so extensively carried on in England, and the sale of secret remedies by haberdashers, hardwaremen, and jewellers. "If I were asked," says M. Philippe, "in what country pharmaceutic charlatanism is most common, most impudent, and most lucrative, I would answer, without fear of contradiction, that it is in England, and in London in particular."

Lastly, he refers to the want of chemical science among the practical pharmaciens of Great Britain. On this score we must plead guilty; science is too jealous to yield her laurels to a divided attention, and it is not to be expected that those who combine the pursuits of pharmacy and chemistry with the distractions of general practice shall shine as lights in her paths. It is, as we before observed, a lamentable fact that pharmacy, as a science, has been too much neglected in these countries, and but a very small minority, even of the few among us who have laboured to advance it have belonged to the ranks of pharmaciens proper. We trust, however, that a better state of things is opening upon us,—the proceedings of the Pharmaceutical Society in England, the formation of a Museum of Materia Medica and pharmaceutical and chemical preparations now in progress at the King and Queen's College of Physicians of Ireland, and the institution of annual prizes for purely scientific questions in chemistry and pharmacy by our own Apothecaries' Hall, show that attention is being awakened to our defects, and that efforts are being made which may yet render the School of Dublin not less distinguished in the domain of pharmacy than it already is in that of practical medicine and surgery.

Observations on Syphilis, and on Inoculation as the Means of Diagnosis in Ulcers and Discharges invading the Genital Organs; comprising also a Brief Outline of the Ancient and Modern Treatment of Syphilis, and pointing to New Views and to a New Method of treating that Disease. By JOHN CROWCH CHRISTOPHERS, M. R. C. S. London: Churchill. 1853. 8vo, pp. 74.

IN perusing a treatise on any particular class of diseases, the question naturally arises, as to the author's antecedents, from what sources has he derived the information which he purports to impart to his readers; upon what foundation are his premises based; what the opportunities which have been afforded him for investigation; all of which considerations must materially affect the value of deductions made, and more especially of aphorisms, which at the present day are too often dogmatically propounded. And if these observations hold good as regards the elucidation of disease in general, how much more closely will they apply when we reduce them to specialties, which for their clear and accurate demonstration demand an extensive and varied field of research. In our last Number we brought under the notice of the profession two works on syphilitic diseases, which had just issued from the press, the one from the pen of Vidal (de Cassis), the distinguished colleague of Ricord at the Hôpital du Midi; the other from that of Dr. Egan, whose observations were based upon an experience of nearly five years, during which period he was officially connected with our Lock Hospital; upon both of these volumes, for reasons previously stated, we felt bound to speak in terms of the highest commendation.

The materials for Mr. Christophers' book have been gleaned from a more circumscribed sphere, and in this particular differ, we believe, from every other treatise on the subject; on that point, however, we shall allow the author to answer for himself:—

"I have been in the habit," says he, "for some years past of experimenting by inoculation, of noting cases, and of recording observations on the divers modes of treatment employed by myself and others in syphilitic disease. Moreover, I have attended to a point which I consider has been greatly neglected, and to this neglect a vast deal of error and discrepancy is due. I have been at the pains to keep a considerable number of cases under observation for years after their treatment, and as far as this amount of experience warrants, my mind is made up to certain principles, and to a plan of treatment at variance with doctrines hitherto propounded."

Far be it from us to find fault with a practitioner for instituting a careful analysis of the cases which present themselves to his notice in his private practice. We have ourselves derived much profit and advantage from a steadfast adherence to this rule, and we unhesitatingly recommend it to every one engaged in the treatment of disease; but when on these detached and isolated notes, as a basis, a superstructure is attempted to be raised, and sweeping deductions generalized from particular instances, we at once condemn the practice as mischievous, and well calculated to lead to false and erroneous conclusions. Further, when we are informed that "certain principles" have been arrived at, and a novel plan of treatment has been devised from the system of keeping close watch on *private* patients for years after their treatment, we confess we become somewhat sceptical as to the soundness of the doctrines which this "principle" would inculcate. And in truth it requires no force of reasoning to substantiate the oft-told tale, that patients, when released from medical surveillance, having once contracted habits of licentiousness, are prone to fall before temptation, and become again the victims of disease; nor in these cases of renewed infection does it follow that the same surgeon is consulted, or that these fresh indications of imprudence are presented to his notice. Moreover, secondary symptoms may succeed, and relapses ensue, of which the former attendant may be perfectly unaware, for our experience of this class of patients has taught us that they frequently travel from one surgeon to another, in expectation of a quicker and more efficacious cure.

Mr. Christophers, in common with many other writers, declines entering upon the history of these affections, deeming their origin at most a matter of conjecture; but it is at the same time evident that he inclines to the belief of those who refer their outbreak to the latter end of the fifteenth century. He is likewise of opinion that the disease, during late years, has undergone a considerable modification, which he correctly ascribes to the adoption of a more scientific and rational mode of treatment.

Upwards of six pages of large type are next occupied with copious extracts from Hunter's work, interspersed with the occasional comments of the author on the injurious effects which are likely to follow the indiscriminate employment of mercury, —remarks so trite, that we venture to assert they are familiar as "household words" to the veriest tyro in the healing art. The question as to the identity of gonorrhœa and chancre is now mooted, and Mr. Christophers, after having alluded to the ex-

periments instituted both by Hunter and Bell, agrees with the latter as to the non-identity of the two poisons. To the army surgeons, and to the celebrated pathologist, Broussais, is attributed the decided improvement which has taken place in the treatment of the disease; and although, much as we are indebted to the disinterested and indefatigable labours of the medical officers of the British Army, and to the strenuous exertions of our continental brethren, we must here remind the author that, as regards priority, the honour which he accords to others is due to our own countryman, the late Mr. Carmichael, whose name, we regret to find, is not once mentioned in connexion with this part of the subject. Such an omission we conceive the more inexcusable, as reference is made to individuals of whose existence we have hitherto been unconscious. Mr. Christophers coincides with the accuracy of the conclusions arrived at by the adoption of the simple treatment, viz., that every form of ulceration on the organs of generation is curable without the aid of mercury, but states that, when this course is exclusively pursued, the process of convalescence is more protracted than when a mercurial treatment is resorted to. He likewise affirms, what every practical surgeon must have observed, that where primary ulcers assume a chronic condition, a reparative action is not unfrequently set up by slight mercurialization; this salutary effect we hold is explicable on the general principles of surgery, apart from any specific character in the sore itself.

The comparative rarity or frequency of secondary symptoms, under the mercurial or non-mercurial plan of treatment, next engages the attention of the author, and here two propositions are dogmatically laid down, and conclusions arrived at from the "practice of inoculating every case" that presented itself to Mr. Christophers among his private patients:—

"Through this means I found that no one case tested by inoculation, and proved thereby to be syphilitic, whether treated by mercury or otherwise, escaped secondary symptoms, under a more or less severe form, by which I imply that secondary symptoms in some shape are the inevitable consequence of a genuine chancre[a], be the treatment what it may." And again:—"The converse position also holds good, that in no instance, the inoculation failing, have secondary symptoms supervened; therefore, let the treatment be mercurial, or let it be simple, if the case be one of genuine chancre, secondary

[a] In speaking of syphilitic ulcers, Mr. Christophers attempts no classification beyond limiting the term "genuine chancre" to sores which are reproduced by inoculation.

symptoms, in some shape, will as surely follow, as that the sore will be reproduced by inoculating with the virus it secretes."

Now we need scarcely add, that from both these conclusions we altogether dissent, and we cannot but think that if the operations adverted to were performed on a more extensive scale, inferences such as the foregoing would never have been deduced. We have frequently observed the positive result produced by inoculation without the subsequent supervention of secondary symptoms, and more commonly still have we witnessed the occurrence of consecutive disease where inoculation had failed in proving the specific nature of the sore. On these points our views entirely harmonize with those of Mr. Parker when he states—"That certain ulcers, the result of sexual intercourse, and not distinguishable by their external characters from other ulcers equally the result of sexual intercourse, yield a characteristic pustule by inoculation; but the ulcers which do not yield the characteristic pustule are equally liable to be followed by secondary symptoms." And with a more recent writer when he says—"The superficial, non-indurated, primary ulcer is sometimes inoculable, at other times not. Each description of sores is occasionally followed by mild constitutional symptoms"[a]. It will likewise be observed, when Mr. Christophers affirms that secondary symptoms equally result on a venereal ulcer, whether treated with mercury or not, he runs counter to the authorities of Rose, Guthrie, Bacot, and others, who have proved from extensive statistical induction that constitutional symptoms of a mild form are of much more frequent occurrence in individuals where mercury had not been employed in the treatment of the primary affection, than where a contrary line of practice had been originally resorted to. Following closely the author, we arrive at four assertions, which are made in the form of propositions as the result of his observations:—

"1st. The severity of secondary symptoms I have invariably seen to be in a ratio with the duration of the primary disease; the longer that exists, the more surely and effectually it impresses the constitution. 2ndly. The duration, not the number of primary sores, influences the severity of secondary symptoms. 3rdly. The duration, not the severity, of the primary sore or sores, influences the severity of secondary symptoms. 4thly. The difference in the appearance of the primary sores, and the difference of appearance assumed by the secondary affection, is influenced by constitutional

[a] Egan on Syphilitic Diseases. London: 1853.

idiosyncrasy, habits, and treatment, and not by virus of different character."

Here, again, we must join issue with the author on his first proposition; and while we are free to admit, what he himself further on acknowledges, that in destroying the primary ulcer as soon as possible after its formation, the chances of consecutive disease are very much lessened, at the same time it does not by any means follow that, *because* the primary sores remain unhealed, *therefore* the secondary symptoms should put on a formidable aspect. Now, we most positively assert, and in doing so we are borne out by an extensive experience, that if the primary, superficial, non-indurated ulcer were to continue uncicatrized for months or years, if possible, the absorption of the virus would never produce rupia, nodes, and that loathsome form of sloughing at the back of the pharynx which we so frequently observe as the consequence of the primary phagedenic ulcer. Nor would the same description of sore, no matter how long its standing, give rise to the true scaly eruption, or the excavated ulcer in the tonsils,—constitutional affections which are well known to succeed to the indurated ulcer, properly so called. But, apart from these considerations, we do not believe that absorption from syphilitic ulcers proceeds *ad infinitum;* there are certain limits to this process, as surely as there are certain stages where a poisonous sore ceases to generate infectious matter. In stating, in his second proposition, that secondary symptoms bear no relation to the number of primary sores, our opinion perfectly coincides with that of the author. From his third proposition, however, we must again dissent, as we know in cases of phagedenic ulceration the most formidable species of primary sore, when constitutional symptoms supervene—which fortunately, in consequence of the rapid destruction of parts, is of comparatively rare occurrence —they almost invariably bear a direct ratio as regards severity to the primary affection. To the last proposition we shall not now address ourselves, as we shall have occasion to return to it when examining into the authenticity of the proofs adduced in its favour in a subsequent part of the work. In alluding to the mercurial treatment of primary ulcers, the practice of excessive salivation is justly deprecated; and where this mineral is indicated, the author gives the preference to small doses of calomel, so as to produce a mild degree of ptyalism, which is to be followed up by the administration of the iodide of potassium.

Mr. Christophers goes on to state, that it never yet occurred

to him to witness a single case of tertiary symptoms following simple treatment. Now, while we admit that the most severe forms of periostitis are consequent upon the abuse of mercury, and that caries and exfoliation of the nasal bones are only encountered where the constitution is saturated and poisoned, as it were, with the mineral, we are equally clear that nodes result from the pure and uncomplicated absorption of the venereal poison.

From the 26th to the 39th page the author furnishes us with the details of cases in which inoculation had been practised as a diagnostic test, confirmatory of the experiments instituted by M. Ricord and others on an extensive scale. The arguments in favour of inoculation as a means of diagnosis are, in the main, identical with those adduced by the professor at the "Hôpital du Midi." There is, however, one deduction to which we must take an exception as being contrary to recognised authority:—"12th. That chancres cannot be produced by inoculation in the lower animals." Now we really did not think it possible that any author, undertaking to write on the subject of inoculation, could make the foregoing assertion, more especially as the experiments of M. Auzias-Turènne, by which it has been incontrovertibly proved that syphilis *can* be communicated to animals, are at present the subject of repeated discussion, and upon which the absurd and dangerous doctrine of prophylactic and curative syphilization was attempted to be engrafted. We very much fear that in this particular instance, as in some others which we might readily point out, the author has fallen into grievous errors, in consequence either of ignorance or contempt of established authorities. Moreover, although repeated allusion is made to the doctrines of Ricord, Mr. Christophers does not seem to be acquainted with the more recent opinions of that surgeon, embodied in his letters addressed to the editor of the *L' Union Médicale* in 1850–51, and of which we gave an analysis in our volume for last year.

The remarks on the administration of the iodide of potassium, and the doses in which it should be exhibited, are most judicious, as well as the succeeding observations and cases cited to prove the injurious effects of mercury in phagedenic or sloughing sores. The author constantly reiterates his belief in the unity of the syphilitic poison, which, he conceives, is modified by idiosyncrasy, mode of life, situation, treatment, &c., and finally states that his views are supported by the results of inoculation. As we have already noticed Mr. Christophers' book at more length than we had proposed, we cannot enter on

the discussion of that interesting and much-disputed question; nevertheless, we are bound to direct the attention of the author to the writings of Ricord, Acton, and Hamilton, by reference to which he will observe, that his alleged proofs are precisely the contrary of what he affirms, and are altogether at variance with the theory which he endeavours to support. The book is concluded with a few desultory remarks on the communicability of the disease from husband to wife, from parent to offspring, and from nurse to child; in the last-named instance this mode of infection is duly recognised.

We regret that we have not been able to speak of this *brochure* in terms of praise; it is possible that, on reading the title-page, we may have expected too much; and as the substance of the book is compiled from observations which appeared in the "Lancet" so far back as the years 1845, 1846, and 1847, we probably should not have been disappointed at non-allusion to more recent authorities. In addition, it is, however, in many places very faulty as regards composition, is quite destitute of order or arrangement of any kind, and abounds in repetition. Notwithstanding, we are still free to confess, that we have found some wheat among the chaff; and that the remarks on the subject of treatment, although to our minds containing nothing novel, are, nevertheless, sound and judicious.

On Near Sight, Aged Sight, Impaired Vision, and the Means of Assisting Sight. By William White Cooper, Fellow of the Royal College of Surgeons of England. Second Edition. London: Churchill. 1853. Fcap 8vo, pp. 320.

Though the affections treated of in this volume are pretty fully discussed in the various treatises on ophthalmic medicine, Mr. Cooper has taken some trouble to amplify the matter, and bring these several subjects into, at least, a more prominent position than is usually assigned them in such works. We can scarcely say that, in a scientific point of view, the treatise before us has added anything of material importance to what had been already known; but as it is written in a plain and somewhat popular style, it is calculated to instruct the non-professional reader, the aim probably of the author, as the illustrative cases are certainly drawn up so as to be adapted to the eye of the public.

The first subject discussed is "myopia, or near sight." Mr. Cooper treats of it under two heads: 1st. "When it arises from imperfection in the form, consistence, or relation

of some of the refractive media." 2nd. "When it arises from the loss of adjusting power." He then states, that—

"The most frequent cause of congenital myopia is too great convexity either of the cornea or of the crystalline lens, or of both. In many cases of aggravated myopia, I have satisfied myself that the cornea had too much curvature, and that the anterior chamber was preternaturally large. Myopia may be the result of too convex a crystalline lens, or of too great distance between the cornea and retina, arising from the mass of vitreous humour being greater than the other parts of the eye require."

We believe that any such congenital defect is exceedingly rare, and Mr. Cooper must have surely observed many eyes in which the convexity of the cornea seemed too great, and that the anterior chamber appeared "preternaturally large," without, however, any accompanying defect in vision. Again he says: "An undue density of any, or of all, the refractive media, though the figure of the eye be normal, may also occasion this affection." It *may* be so, and, doubtless, did any "undue density" exist, the refractive power of the eye would be altered; but we are not aware that any such abnormal alteration has been demonstrated as the cause of myopia. We believe that in almost every instance of short sight the defect arises after the eye comes to be severely tasked, in the earlier years of life, and not from any original formation, and that, if the overtaxing of its powers be not persisted in, the eye will soon recover its healthy action, provided that the defect has been observed before any material injury has resulted to its adjusting apparatus! Hence the cure is to be effected by abstaining from viewing near and minute objects, by strengthening the general system, and by exercising the eyes upon distant objects. On this point Mr. Cooper lays down excellent rules, and we quite concur in the practical bearing of his instructions.

The next chapter treats of presbyopia, or aged sight, which would be better named, we think, long or distant sight, in contradistinction to short or near sight, and especially as presbyopia is not always the result of advanced years, and is frequently observed in persons who have not nearly reached even the middle period of life. In this chapter Mr. Cooper, after fully explaining the causes of presbyopia, enters upon the best method of remedying the defect; when speaking of adopting glasses, he says:—

"Their use, however, should not be deferred; for, although it is a common notion that spectacles are injurious to the eyes (and no

doubt they are so, if those of an improper description be employed), yet, when the powers of the eye so begin to fail that we can neither read nor write for any length of time, without great discomfort, it is reasonable to conclude, that refraining from their use is more injurious than their adoption. We, therefore, who prize the most valuable gift of nature, should be less anxious as to what others may think of our age, than for the preservation of so valuable a possession.

"The term 'preservers,' applied as it has been to the lowest description of convex glasses alone, tends to convey the idea that if such glasses are used in time, they prevent any further changes in the eye. This is erroneous, and it is to be regretted that the lowest magnifying powers should have received that appellation, for all glasses are 'preservers' if well adapted to the wants of the eye; whereas by applying that term to those particular glasses alone, thousands are induced to use them before they really require them, which is productive of injurious consequences, inasmuch as by assisting the eye before it needs help, we encourage it to be indolent in its action."

We are satisfied that the opinion here offered is judicious, for we know that either deferring the use of glasses after the eyes have become in the least distant-sighted, or putting on any kind of spectacles with the view of preserving the sight of eyes still in the possession of normal mediopic vision is a most pernicious proceeding.

In speaking of the use of glasses for the aid of presbyopic sight, Mr. Cooper makes the following useful observations:—

"It cannot be too strongly urged upon any one about to use spectacles for the first time, that that power which will enable him to read without much exertion by candle-light is the only power suitable for him."

And in conclusion, he says:—

"Glasses should never be worn by young persons without advice, under the idea of 'strengthening their sight:' it is a very great, though common error.

"Elderly persons should have recourse to spectacles as soon as they find their eyes aching and distressed in the evening with ordinary work; for more harm will arise from struggling against this failing of nature, than from the moderate use of suitable glasses.

"Spectacles should never be used unnecessarily nor indiscriminately, nor should they be worn in the open air, unless their aid cannot be dispensed with. They should be wiped with wash-leather when dull, and if the glasses become scratched, they should be renewed. Lastly, if people value their eyesight, they will shun cheap and imperfect spectacles, and puffing opticians."

These remarks, though they contain nothing of novelty, were they generally known and appreciated by the public, would certainly be productive of beneficial results; the medical practitioner is, or should be, aware of the force of Mr. Cooper's observations; but the people at large are very ignorant on these matters, and are open to the deception of the "puffing opticians," and to the evils arising out of the errors of ordinary opticians, who frequently know very little about the proper application of spectacles.

With respect to "puffing opticians," it is clear that they succeed in cheating the public, in a great measure, through the certificates they possess from certain qualified medical practitioners, who, from some motives, probably the prospect of being ranked in an advertisement among the "eminent members of the profession," are induced to give testimonials to itinerant optical quacks; a step at once unprofessional, and injurious to the community, and which cannot be too severely censured.

The next subject treated of in the third chapter is, "Impaired vision from overwork." This is one of the most common affections to be found among the ill-fed, ill-clothed workers in mills and similar large establishments, where there is much artificial light used, where there is great heat, and usually a great disregard of the principles of ventilation; we know of no more distressing affection, arising, as it most frequently does, in persons, young persons, who are necessitated to maintain themselves by daily labour, and in circumstances most trying to health. Mr. Cooper has given a pretty fair delineation of the complaint in the various aspects that it assumes, and the treatment he advises is, in the main, judicious.

With respect to abstraction of blood in these cases, we have always found, where there was evidence of congestion of the tissues of the eye, that local depletion by leeches was of infinite service, though the patient was even of "low vitality and feeble powers;" but when this evidence was not present, of course any such depletion was not required. Rest, absolute rest, is the best restorative in all cases of asthenopia, but when circumstances do not admit of that, the individual case must be treated according to the symptoms present, yet, in every instance, we believe that tonics—especially the preparations of iron—are essential to the cure, even when local congestion is present. We have not much faith in blisters in these cases; we have found stimulating embrocations, or the application to the brows of an ointment containing veratria, to afford greater benefit. Mercury in minute doses, as recommended by Mr.

Cooper, is often very serviceable, when there is a tendency to structural change in the deep tissues of the eye, yet we believe that, as asthenopia is essentially a disease of anemia, iron is, beyond all other medicines, the best internal means to be employed in the treatment of the affection. The preparation we have found most useful is the solution of the ammonio-chloride, which we are in the habit of prescribing in full doses.

The fourth chapter, on "Achromatopsy, or the inability to distinguish colours," is of little value in a practical sense, though it relates some "phenomena connected with the subject," which will likely interest those who are curious in such matters!

The three concluding chapters are devoted to the consideration of "glasses," "eye protectors," and "artificial light." The directions regarding the choice and use of spectacles are plain and practical, and recommend themselves to the notice, both of the professional and general reader, to either of whom the hints contained are of essential value. On the subject of "eye protectors," we have little to say beyond entering our firm protest against the doctrine regarding the cure of squint, which the author introduces and endeavours to enforce. And we are certainly surprised to see such views put forth by the ophthalmic surgeon to a metropolitan hospital; for every practitioner of tolerable experience in affections of the eye should know that the only rapid, certain, and perfect cure of a squint, admitting of any such interference, is to be obtained by surgical operation. Indeed, we fear that Mr. Cooper has not turned his attention to this subject, and we base our belief on the following passage, which is to be found at pages 253 and 254 of his book:—

"We receive material assistance in forming an opinion as to the precise nature of a case of strabismus by closing the sound eye, the other remaining open. If the squint still continues, and if the eye be unable to follow the movement of a pencil-case passed slowly transversely before the eye, we may fairly conclude that there is contraction of one or more of the muscles, and the case is favourable for operation. But if the distorted eye becomes straight on the other being closed, and follows the pencil-case without difficulty, we may reasonably hope to overcome the distortion by judicious practice, without having recourse to operative proceedings."

Now we assert that the very opposite of the illustration given here would guide any surgeon who had experience in the treatment of squint. If on covering each eye successively, we found that either of them did not become straight, the other

being still covered, we would consider the case as anything but "favourable for operation," as we would fear that, in a case of internal squint, without any power of abduction, there was some want of power in the external rectus muscle, and the persistent squint arose more from a want of due antagonism to the internal rectus, than from any preternatural shortening of that muscle. We always wish to see the pupil of the squinting eye, when the other is covered, carried to the centre line of the orbit at least. In all such cases, where no obstacle to the operation, such as opacity of the cornea, tumours, or any mechanical impediment exists, we operate with a pretty certain belief of success; but in the cases where there is little or no abduction of the eye, we feel very doubtful indeed as to the result of an operation. Such are our views, founded on the examination of many hundreds of cases, and supported by the experience of practical surgeons; and we are perfectly satisfied that scarcely any case of squint, which is *permanent*, and of more than a few months' standing, can be cured by any such training as that recommended by our author, and, consequently, that such a proceeding is by no means "judicious practice."

We must now dismiss Mr. Cooper's book; we consider that the subjects of which it treats are very fairly discussed, and that the volume contains a considerable amount of information, although a good deal of the matter might have been, with advantage, left out,—we allude especially to a number of the cases. The volume, on the whole, is an average sample of a great portion of the medical works, the production of London practitioners, which issue, almost daily, from the press, the writers of which seem to imagine they are under some moral obligation to become authors. Whether they individually benefit by the conception we know not, but we are pretty well satisfied that the world does not, in all cases, reap any great advantage from their labours.

Cursory Remarks on Recruiting and Recruits. By Frederick Roberts, Staff Surgeon, Second Class. London: Parker, Furnival, and Co. 1852. Pamphlet, pp. 31.

Recruiting and Recruits are the subjects of our Author's essay, and subjects of such national importance, that we cannot, in noticing his pamphlet, but regret that the matter is not more fully considered.

Hitherto the horses of our cavalry and guns have been selected with a degree of care and caution not to be surpassed,

but our men, on the contrary, have been enlisted with too great laxity, and too little regard to moral and physical capacity. This fact seems to have arrested the notice of the author, who devotes the pages now before us to the consideration of the condition of our Army,—offering some general remarks upon the moral and physical conditions in recruits, the influence of local association in the success of recruiting and characters of recruits, the influence of a standard height on the physical capacities of recruits, the selection of men for cavalry, artillery, sappers, grenadiers, and light infantry, and the influence of age in recruits. These form the subject-matter of consideration. Our space will not permit us to do more than notice one or two of these points, and we shall select those included under the head of the moral and intellectual capacities, because on these our author does not seem to be altogether correctly informed. He says, at page 8: "Reading and writing are particularly desirable, but are not universally considered as essential in the requirements of a soldier." So far from this being the fact, the regulations of the Army now enjoin that every recruit shall attend his regimental school until dismissed drill; in infantry for *two hours*, and in cavalry for *one hour daily*, for a period, upon an average, of *six months* in the former, and *twelve months* in the latter; and consequently there is not now one man in a hundred who is not well qualified in these respects. Education, however, does not terminate here; for, although *compulsory* attendance ends when the soldier is dismissed drill, yet every inducement is held out to him to continue to avail himself of the advantages to be derived from the school; and to prove how fully this is appreciated by the troops themselves, it may be sufficient only to mention that, at the present moment, out of 700 men attending the garrison school of Dublin, no less than 550 are volunteers, who spend an hour and a half daily in acquiring a knowledge of arithmetic, grammar, history, geography, and fortification. We think, therefore, that the education of the soldier is full well regarded.

Next, as to the moral condition of the soldier,—Mr. Roberts says, at page 9, "that excessive crime prevails in the general mass of the army." Now, taking the word crime in its common acceptation, we dissent altogether from this remark. We believe the soldier to be infinitely a better man than the civilian of his own rank of life, that is to say, so far as regards the commission of felonious acts, or deeds which would become the subjects of trial at sessions or assize. Against mili-

tary law he commits many offences; desertion, drunkenness, breaking out of barracks, insubordination, sale or loss of his accoutrements, &c., breaches of discipline requiring correction, it is true, but offences which we would hardly designate by the harsh word crime.

Our author next draws parallels between the frequency of these offences in cavalry, infantry, and the line, and in some of his remarks is right, in others altogether wrong. On the whole, however, we are favourably impressed with Mr. Roberts' opinions upon recruiting and recruits, and feel that his intention in writing is good.

An Essay on the Action of Medicines in the System; or, "On the Mode in which Therapeutic Agents introduced into the Stomach produce their peculiar Effects on the Animal Economy." By Frederick William Headland, B. A., M. R. C. S. London: Churchill. 1852. 8vo, pp. 346.

This treatise was the prize essay to which the Medical Society of London awarded the Fothergillian Gold Medal for 1852.

The author, after the manner of other prize essayists, has endeavoured to answer the whole of the questions proposed, and, in common with them, has not succeeded so well as if the subject had been of his own choosing, and as if he lay under no obligation to answer any questions except those which he was able to answer. To this circumstance we must ascribe the acknowledged fact, that prize essays, even when undertaken by the best hands, have been almost universally failures. The desire to render that complete which is still imperfect, and to stamp with certainty and the form of proof what has hitherto been conjectural, are the temptations besetting the mind of every one who has sat down to compose a prize essay. No subject in the whole range of medical science is more replete with allurements of this description than the Materia Medica; and when we say that our author has been carried out of his depth, we place him in good company along with many of the greatest names in medicine—men whose labours in other departments have been substantial and durable, but who on this subject have gone out of their reckoning, and been submerged in the same abyss.

The following is his "classification of medicines which act after entering into the blood, according to their supposed modes of operation."

CLASS I. HÆMATICA.

DIV. I. RESTAURANTIA.

Ordo 1. Alimenta.
„ 2. Acida.
„ 3. Alkalia.
Ordo 4. Tonica.
„ 5. Chalybeata.
„ 6. Solventia.

DIV. II. CATALYTICA—(Producing the destruction or counteraction of certain morbid agencies (*καταλυω*).)

Ordo 1. Antiphlogistica.
„ 2. Antisyphilitica.
„ 3. Antiscrofulosa.
„ 4. Antiarthritica.
Ordo 5. Antiscorbutica.
„ 6. Antiperiodica.
„ 7. Anticonvulsiva.
„ 8. Antisquamosa.

CLASS II. NEUROTICA.

DIV. I. STIMULANTIA.

Ordo 1. Stimulantia generalia.
Ordo 2. Stimulantia specifica.

DIV. II. NARCOTICA.

Ordo 1. Inebriantia.
„ 2. Somnifera.
Ordo 3. Deliriantia.

DIV. III. SEDANTIA.

Ordo 1. Sedantia generalia.
Ordo 2. Sedantia specifica.

CLASS III. ASTRINGENTIA.

Ordo 1. Astringentia mineralia.
Ordo 2. Astringentia vegetabilia.

CLASS IV. ELIMINANTIA.

Ordo 1. Sialagoga.
„ 2. Expectorantia.
„ 3. Cathartica.
Ordo 4. Cholagoga.
„ 5. Diaphoretica.
„ 6. Diuretica.

To the above arrangement many objections may be urged, but not more than to every other arrangement of the Materia Medica. When Galen laid down his system of pathology, consisting of four classes of diseases, arising from a predominance of cold, heat, dryness, or moisture, he arranged a system of the Materia Medica exactly to correspond to it, and all his medicines were either hot, cold, moist, or dry. This was all precise, and the difficulties were confined to details respecting individual remedies, and the rank which they ought to hold in their respective classes, which was indicated by numbers. But in our present state of pathology, which is based on derangements of great complexity, some chemical, some mechanical, but the greater part dynamic, and involving all the various structures and organs of the living body, any such adaptation of remedies to diseases, without disturbing or con-

fusing each other, so as to form a strict and logical arrangement, is clearly an impossibility. It is as if one were to divide the British army into eight classes:—1. The cavalry; 2. The infantry; 3. The artillery; 4. The English; 5. The Irish; 6. The Scotch; 7. The men over size; and 8. The men under size. Besides this evil of conflicting divisions, the basis of every arrangement must be not only distinct—it must also rest on distinctions not liable to change, otherwise the system founded on it will be insecure and valueless. Linnæus, that great master of systematic arrangement, was so thoroughly convinced of the absolute necessity of this, that he placed all preceding botanists in two divisions: the first, those whose system was founded on the fructification, or some part of it; and the second, those who based their system on other and more variable parts of the plant, as the stem, the root, or the leaves. The first he called orthodox, the latter heterodox; and, in adopting this principle, he has been followed by all subsequent botanists. But where in any physiological arrangement of the Materia Medica can any such fixed and immutable boundaries be found? To go no further than the first of our author's divisions, the Restaurantia, we have in it the Alkalies; while in Dr. Fleming's arrangement, published in the pages of our Journal for November last, they are among the Atonics. As long as the authors of systems can find no better foundations than opinions in pathology, combined with another set of opinions on the action of remedies in connexion with pathology, they must be content with their proposed arrangements being placed among those things which are, in a twofold sense, matters of opinion, and nothing more. Classifications are convenient, and indeed necessary, to the author or teacher. He is thus enabled to tie together a number of subjects, and to assist the memory; but when they are made to assume any higher importance they may prove not only delusive, but mischievous to the practitioner who in any way relies on them.

Every medicine stands by itself. It may resemble some other, but has no further connexion with it, and the successful administration of it does not depend on the analogies which any one may have supposed to exist between it and others, but on our knowledge of its operations under the varied circumstances in which we have to appeal to its effects. This part of the Materia Medica (Pharmacology) is in fact the great desideratum for the practitioner, but is of immense extent, and beset with so many difficulties, that to learn the effect of any one article, even apparently insignificant, under all the circumstances to which it may be applied and combined, would require the

observation of years. We cannot but marvel that the Medical Society, which has the disposal of the Fothergillian Gold Medal, should have proposed it as a reward for an undertaking, which, if achieved according to the terms expressed by them, would place the author above Newton or Laplace, and for which the members, even if they were to coin their hearts and brains into ducats, could never find a suitable recompense.

Our author, in his attempt to solve this mighty problem, or rather series of problems, has made short work of a great portion of it, by maintaining the old notion of specific remedies, which he has embodied in his Catalytic division, prefixing an *anti* to the diseases on which they are presumed to act. Much may be said in favour of this on account of its facility and convenience, but our author is not content unless for "every why he has a wherefore," and has interspersed here and there a variety of explanations, some chemical, some mechanical, and some dynamic, which, being at best grounded only on probabilities more or less, and not proved, we altogether decline to discuss, remembering still enough of our logic to know that the inability or difficulty of proving the negative by no means proves the affirmative.

We quote, however, with great satisfaction, the following experiments by Mr. Headland which tend to overthrow the endosmotic theory of M. Poisseuille, according to which any ordinary saline purgative of greater specific gravity than serum (1·028) acts by causing the passage of this serum outwards into the intestine by exosmose, thus producing a watery evacuation. This, like many other theories, merely because no one has been at the labour of finding experimental proofs against it, has been accepted as a fact by several estimable authors. Thus it is that, in our haste for generalizing and theorizing, we are obliged to retrace our steps, but not until we have added another heap to the mountain of rubbish which overspreads every part of pharmacology. The following are our author's experiments:—

"EXP. 1.—A sufficient quantity of white sugar was dissolved in four ounces of water to raise its specific gravity to 1·028, that of the serum of the blood. Two drachms of sulphate of magnesia were dissolved in another ounce of water, so that the solution measured nine fluid drachms, and had a density of 1·060. This heavier solution was introduced into an open wide tube, closed completely below by a clean piece of bladder. It was introduced into a small vessel containing the solution of sugar, and arranged so that the height of the two liquids should correspond. After three days, the inner solution measured two drachms more, and the specific gravity had sunk to 1·050. The outer solution, after making up exactly the loss by evaporation, was found to have risen in density to 1·040.

On adding to each of the solutions a small quantity of phosphate of soda and carbonate of ammonia, a copious precipitate took place, indicating the presence of magnesia. Thus it appeared that the fluids passed both ways, some of the heavy solution of magnesia finding its way through to the lighter solution of sugar. The tendency of this process was evidently to an equalization of their densities, both by endosmose one way and by exosmose the other. Thus, apparently, would it be with a saline purgative, and with the serum of the blood.

"Exp. 2.—Three drachms of sulphate of magnesia (a very mild purgative dose) were dissolved in ten ounces of water, and thus administered to a healthy young man. It produced, after some time, slight purging, and some diuresis. The urine, when tested, contained only a very little more than the usual quantity of magnesia. The quantity in the dose was less than five per cent. of the solution, and thus, according to the endosmotic theory, should have produced no purging.

"Exp. 3.—Six drachms of the same salt were given in eighteen ounces of water to the same patient. After a few hours, it caused very copious and long-continued watery purging. The urine did not seem to be increased, and contained no excess of magnesia. It seemed, that in spite of the dilution, the quantity of the salt was so large, that it could not pass off by the kidneys, and so was eliminated from the blood by the bowels, in the same way as other purgative medicines.

"Exp. 4.—This trial was the reverse of the last. Two scruples of acetate of potash were dissolved in three drachms of water, and thus administered. The solution then contained about twenty per cent. of the salt. According to the endosmotic theory, it should have caused only slight purging, on account of its density. It did not do so, but produced diuresis. The dose was so small, that, after absorption, it was easily eliminated by the kidneys."

As confirmatory of these experiments we may add that, it having occurred to us that if this endosmotic theory was true with respect to the intestines, which have a compound structure, it might also apply to other parts, more especially if greater length of time could be allowed for its operation. Accordingly, in a case of ascites in a patient with very thin integuments, we kept a solution of salts of great density constantly over the abdomen, but there resulted neither diminution of the fluid from within or increase of that without.

We hope on some future occasion to find our author, instead of beating the air with generalities, applying himself to some definite subject; and whenever he shall bring his talents and energies to a focus on some one point of the Materia Medica, we see much in this work to lead us to anticipate his success.

PART III.

MEDICAL MISCELLANY.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

THIRTEENTH SESSION.—1852–53.

Malignant Tumour within the Cranium.—Dr. M'Dowell exhibited the brain of a man, of middle age, who, in August, 1849, had been admitted into the Richmond Hospital with a small tumour in the parotid region, which was removed by Dr. Mac Donnell. The wound soon healed, and the man continued well for six months, at the end of which period he began to suffer from occasional attacks of loss of power of the left arm and leg; they occurred once or twice a week, and lasted for several hours; he likewise suffered from violent attacks of headach, the pain being referred chiefly to the frontal region. About two years and eight months after the operation, he was admitted into the Hardwicke Hospital, labouring under fever of a low character, and died at the expiration of a fortnight, with suffocative catarrh.

Autopsy.—The original disease was found to have recurred in the parotid region, the surface of the gland being covered with a slight deposit of scirrhous structure; there was no malignant deposit in the chest or abdomen, but a tumour as large as a hen's egg was found resting on the upper surface of the right cerebral hemisphere, near the mesial line; it was covered by the dura mater, which was at one spot perforated by a small projecting portion of the tumour, and in this situation the parietal bone was also perforated. The tumour, which was nearly as firm as scirrhus, had by its pressure formed a cavity for itself in the brain, but there was no softening of the cerebral structure.—*December* 4, 1852.

Malignant Tumours in the Abdomen and Pelvis: Cyst in the Liver.—Dr. Mayne detailed the following case, and exhibited the recent specimens. A female, aged 32, married, and mother of three children, was admitted into the South Dublin Union, under Dr. Shannon, in

the middle of October last. She had enjoyed excellent health until the Christmas of 1851, when it began to decline, immediately after the birth of her last child, and continued to fail up to the time of her admission. She then presented the appearance of a person labouring under some malignant disease or profound organic lesion. She was very much emaciated; her countenance and skin were of a dingy yellow colour; she had no appetite, and her spirits were depressed. On examination a tumour was found in the left hypochondriac region, in the vicinity of the spleen; it was nodulated, elastic, and movable. The finger could be passed all round it, and it seemed to have a pedicle springing from somewhere near the spine. She had no pain, and almost no soreness in it, but experienced wandering pains, like those of colic, in the abdomen. There was another tumour in the right hypochondriac region, the surface of which was smooth; its lower margin could be felt hard and projecting, like an enlarged liver, extending nearly as far as the ilium on the right side. Owing to the total absence of the menstrual discharge, and the existence of a tumour in the position of the uterus, the woman was under the impression that she was pregnant, and could not be persuaded to the contrary. This tumour was about the size of a cricket-ball, and presented the form and size of the uterus at about the third or fourth month of utero-gestation; but it was clearly ascertained that she was not pregnant. She had constant bearing down, frequent micturition, and tenesmus. The neck of the uterus was healthy, as appeared on examination *per vaginam*, but a tumour was found above the uterus, blocking up the pelvis. The best diagnosis we could arrive at was, that the tumour in the left hypochondriac region was of an encephaloid description; that the liver was enlarged; and that some encephaloid growth would be found on it. The day before yesterday she was seized with great prostration of strength, fainted, and said she felt satisfied she was dying. She experienced severe pain, which she referred to the right portion of the diaphragm.

Autopsy.—The tumour in the left hypochondriac region was found to be connected with the gastro-splenic omentum, near the spine, and presented the characters of cephaloma; there was another tumour in the pelvis, between the rectum and the uterus; it was connected with the left ovary, and was remarkably movable. The uterus was perfectly healthy. The liver was enlarged, and its anterior surface presented several small white cancerous tubercles; but the greater portion of the organ was occupied by an immense cyst, which contained upwards of half a gallon of fluid, exactly like uncoagulated venous blood. We considered it to be an acephalocyst, gradually developed to this enormous size. Clusters of small cysts were also found connected with some of the intestines, and one was seen on the surface of the liver. Cruveilhier, and many other writers, have specially remarked on the varieties in the colour of fluids collected in cavities in the liver, which are often of a dark olive hue, owing to the admixture of bile, parts of the

walls of the cavities being eroded, and communicating with some duct in the vicinity. In this case there was an erosion of the surface of the cyst; the blood got into the interior of the cavity, and the result was the collapse before death, and the peculiar appearance of the fluid found in the sac. The lining membrane had the appearance of a serous structure, and the finger could be passed through the erosion into the substance of the liver. The preceding case shows the great difficulty attending the diagnosis of cysts in the liver. Cruveilhier states that the pathognomonic signs are yet to be discovered. In the present case no signs existed except such as were owing to compression; there was no pain nor irritation, although the disease must have been of long duration. The contents of the pelvic tumour seemed to be a semifluid substance, somewhat like mortar, mixed up with a quantity of hair.—*December* 11, 1852.

Tubercles in the Liver, Spleen, &c.—Dr. Lees exhibited a series of specimens of tubercular disease of the viscera, taken from the body of a girl aged 18, who had been sent up from the country as labouring under ascites, and was admitted into the Meath Hospital in August last. She had always been healthy until eighteen months previous to her admission, when she began to suffer from constant thirst, to such an extent that she would drink to the amount of seventeen or eighteen quarts in the twenty-four hours; the catamenia were irregular; she observed also, that she passed more water than was natural to a person in health, and she began to swell in the abdomen, the swelling subsequently extending up to the face, and down to the legs. Eight months after the commencement of her illness, paracentesis was performed, but only a cupful of fluid was drawn off. On admission into hospital, she was much emaciated; she passed eleven quarts of saccharine urine daily, of the specific gravity of 1045. This appeared a suitable case to test the value of rennet, a remedy recommended by Dr. Gray of Glasgow, as having the power of converting sugar into lactic acid. Of this she took a teaspoonful three times a day, with very beneficial effects; her thirst was diminished; the headach disappeared; the menstruation became natural; she gained flesh and strength, and increased in weight. The quantity of urine was diminished, and its specific gravity reduced. Several specimens of it were sent to Dr. Barker, who found that the quantity of sugar was very little diminished, but that the specific gravity was lowered from 1045 to 1028,—no lactic acid could be detected in it. Thus the disease was still present, though mitigated to such an extent that she became anxious to go to the country. After this, she got fever and died. On opening the abdomen, we found but a small quantity of fluid. The whole surface of the liver was thickly covered with miliary tubercles. The kidneys were somewhat enlarged and slightly congested. The cortical structure was thickly studded with tubercles. The spleen also was studded with exceedingly minute miliary tubercles. The lungs were filled throughout, from their apices to their bases, with tubercles, and a small cavity existed in the apex of the

right, lined with a membrane. At first, Dr. Lees observed, he suspected the presence of tubercles, knowing their connexion with diabetes, but the great improvement which occurred in the general health made him hope that the patient would eventually recover. The question arises as to whether the fever was an ordinary one, or whether it was symptomatic of the extensive deposit of tubercle. We frequently meet with miliary tubercles in the liver in children, but seldom in a person so old as the patient in the present case.—*December* 18, 1853.

Painful Subcutaneous Tubercle.—Sir Philip Crampton observed:—The case I have to bring forward is that of a young lady about sixteen years of age, very delicate and pale, who had been suffering for three years from excruciating agony in the last phalanx of the middle finger; at first coming on at intervals, and so violently as to make her cry out; becoming then more frequent in its attacks, and finally continuous. No treatment had any beneficial effect; the moment the finger was touched for the purpose of examination, she was thrown into violent convulsions; she completely lost her health, and was obliged to confine herself to her room. On coming to me, her terror lest I should examine it was excessive, and it was at once evident that any attempt at doing so would be useless. She was, therefore, placed under the influence of chloroform, and I was then able to detect a small tumour, about the size of a grain of snipe shot, in the top of the finger, and by two small incisions remove it. Under the skin in this preparation we see the tubercle about the size of the head of a pin. A question here arose of great interest, both to Professor Smith and myself, as to its connexion with a nerve; but even under the microscope we could find no such connexion. The tumour is of a fibrous structure, and very firm; after its removal the patient was quite free from pain, and a year after the operation she was perfectly healthy.—*January* 8, 1853.

Encephaloid Tumour of the Antrum.—Dr. Fyffe exhibited the recent parts in this case, which was that of a soldier, about twenty-three years of age, who had been a glass-blower before entering the service. He was admitted to the General Hospital in the Phœnix Park on the 1st of November, 1852. He stated that, about three months previously, he had been attacked with catarrh, after recovering from which he began to experience a dull, deep-seated pain in the right side of the face, followed soon afterwards by the appearance of a small tumour in the nose. This rapidly increased in size, filling up the right nostril, by its pressure obliterating the left, and passing outwards upon the external surface of the superior maxillary bone. About two months after its commencement it began to protrude from the mouth; and, when the patient was admitted, the tumour had attained an enormous size: it occupied the entire of the right side of the face, and extended from the eyebrow to below the jaw. After his admission it continued to increase, and hemorrhage took place from it every second or third day, up to the period

of his death, the quantity of blood lost on each occasion varying from eight to twenty ounces; that portion of the tumour exposed to the air became sloughy, and during the periods of exemption from hemorrhage, a thin ichorous discharge poured from its surface. During the last few weeks of the patient's life, he complained a good deal of pain in the tumour, and suffered much from the difficulty of taking his food, the mouth being nearly filled by the morbid growth. He rapidly sank, and died on the 30th December, worn out by hectic and repeated hemorrhages. Upon examination after death, the tumour was found to have filled the mouth, nose, antrum, and orbit; above, it extended across to the left side, and had destroyed the ethmoid bone, and absorbed the roof of each orbit; it was here covered by the dura mater. There was no trace of malignant disease in any other part of the body.—*January* 8, 1853.

Alvine Concretions.—Sir Philip Crampton exhibited three large alvine concretions, which, with several others, had been passed by a lady, who for five years had been supposed to be suffering under ovarian disease, and had undergone very severe treatment; the concretions occupied the caput coli, and the tumour which they formed gave the feel of a large, multilocular, ovarian growth. When Sir Philip Crampton saw her, she told him that she distinctly felt hard substances knocking together in the abdomen; and, upon examining the part, he thought he also perceived hard bodies striking against one another. Shortly afterwards she succeeded in passing one of the concretions, and then others came away at irregular intervals, until fifteen were voided; they were very hard, and perfectly solid. It was remarkable that the functions of the bowels were not deranged.

Sir Philip Crampton then alluded to the case of a young lady, whom he had seen along with Dr. Banon, and who also was supposed to be suffering from ovarian disease; she voided large quantities of muco-purulent matter. Tumours about the size of small apples could be felt along the course of the colon, especially in the situation of the caput coli.

With a view to facilitating their escape, the patient was placed upon a bed, with the pelvis raised two feet above the level of the shoulders, and a large quantity of water was then injected through a long tube; upon the same day one of the concretions was voided. The injection was repeated twice a week for six or eight weeks, and on each occasion some of the concretions came away. The patient was perfectly restored to health.

Sir Philip Crampton next detailed briefly the case of a sailor, who came under his care under the following circumstances. While on board ship he suffered severely from diarrhœa; and, obtaining no relief from medical treatment, one of his shipmates formed for him a plug, consisting of two cylinders of wood—one, an inch and a quarter, and the other an inch in diameter; these were introduced into the rectum, and forced up. The patient was then able to go through his duties during the remainder of the voyage. When he

came to Dublin he applied to Sir Philip Crampton, who succeeded in fastening the screw-ramrod of a gun into the bottom of the plug, which was then slowly and with much difficulty extracted.—*January* 15, 1853.

Abscess in the Cerebellum.—Dr. Gordon exhibited a specimen of abscess in the cerebellum, taken from the body of a man, twenty-seven years of age, who was admitted into the Hardwicke Hospital on the 10th of January, having been ill twenty-one days. His symptoms were rather of an inflammatory type; his skin was hot; pulse quick; lips much swollen, and an herpetic eruption was coming out over him; his speech was thick, and had been so for twelve days, during which period he complained of slight pain in the head, and had raved the night before his admission; his pulse had fallen from between 110 and 120 to 40; he complained, when admitted, of intense pain in the head; he was at once treated actively, and an endeavour was made to put him under the influence of mercury. Next morning he was exceedingly restless, tossing himself about, and screaming loudly and incessantly, apparently suffering most intense agony; the temporal arteries were throbbing violently; the head was hot, and drawn back; the chest thrown forward, the knees drawn up, and the muscles of the neck standing out rigid. As soon as he was brought under the influence of mercury, which was pushed to salivation, he experienced considerable relief; the headach nearly subsided; the pupils, which were hitherto dilated, were now contracted, and his head was no longer retracted. He slept a little, took some food, and continued to improve that day. Next morning, about twenty minutes after eating a good breakfast, he lay back and died.

Autopsy.—There was no inflammation of the membranes of the brain, nor effusion of lymph, serum, or purulent matter; the brain itself was rather vascular, but more especially the cerebellum; on making a section of which, a large, diffused abscess was found, the cavity of which was filled with very thick purulent matter; it had not burst, but the upper surface of the cerebellum, by which it was limited, was remarkably thin. There had been no discharge from the ear, nor any pain in it; neither was there any disease of the temporal bone.—*January* 22, 1853.

Vesical Calculus.—Mr. Smyly exhibited a very large oval calculus, which he had lately extracted from the bladder of a female seventy-seven years of age. She had been for a long time subject to prolapsus of the vagina, along with which, a portion of the bladder used to descend; upon such occasions the stone could be plainly felt, and might have been readily cut down upon and extracted, but for the fear of a urinary fistula resulting. The operation by which it was removed consisted in dividing the anterior part of the urethra with a "bistoire caché." The canal was then dilated so as to permit of the introduction of a blunt gorget, along which the forceps was passed and the calculus extracted. The case terminated very favourably; all irritability of the bladder ceased, and there was no infiltration of urine.—*January* 29, 1853.

Induration of the Brain.—Dr. Mayne exhibited a remarkable example of induration of the substance of the brain, and gave the following history of the case:—The patient, a boy about five years of age, was admitted into the South Union Hospital last Christmas. It was ascertained that he had been subject to fits ever since he was three months old; they were at first attributed to the irritation of dentition, but at length they merged into regular epilepsy. On inquiring into the mental functions it was ascertained that all his organs of special sense, with one exception, were healthy; that vision and hearing were perfect, but that his sense of taste was very much depraved; he had an enormous appetite, and would eat anything that was presented to him, not appearing to care what the quality of the food was, provided he got a sufficiency of it. He had no paralytic symptoms. His mother said that he was very silly, and that he was the hardest possible child to manage; that he did not seem to have the least sense of what danger was. She said she once found him sitting in a sewer leading from the privy, not at all inconvenienced by the soil in which he was placed. On another occasion he was nearly drowned in the cistern in the wash-house; another time she found him sitting under the spout, thoroughly wet; and on none of these occasions did he seem to apprehend any ill consequences. On the 15th of December last he had an unusually long fit, and remained stupid for a few hours. This was followed by another of still longer duration. He was then brought to the hospital, labouring under severe congestion of the brain; his scalp was very hot; he was perfectly stupid; the conjunctiva was suffused; the pupils sluggish; there was violent throbbing of the carotids, and he passed his urine and fæces involuntarily. His head was shaved, and leeches were applied over the mastoid processes. The next morning he was almost comatose; he had passed his urine and fæces in the bed the preceding night; his stomach was irritable, and would retain nothing. A dose of calomel was placed on his tongue, and a blister was applied to the back of the neck and another to the scalp. In a few days he was able to sit up and eat his food, but looked very silly, and seemed perfectly unconscious of everything going on around. He improved for several days, when he got another fit, from the effects of which he did not recover for a few days. This was succeeded by others, and he died a few days ago in a comatose state.

Autopsy.—On removing the calvarium the pia mater was found remarkably vascular, and the large veins entering the longitudinal sinus were distended with black blood. On feeling the surface of the brain, several of the convolutions were ascertained to be remarkably hard and indurated. There was one in the anterior lobe of the left hemisphere, another farther back, and two at the posterior extremities,—they felt like cartilage, and when the membranes were stripped off they looked exactly like it; these abnormal convolutions, when cut into, were found to consist of grey and white structure, both of which contributed to the formation of the induration,

and both had in some degree become altered in appearance, the grey being less grey, and the white, less white than natural, so that they both merged into one another, and you could not say where one ceased and the other began. A case somewhat parallel to this was exhibited to the Society by Dr. Carlile[a]. The question here suggests itself,—what is the exact nature of the induration? Cruveilhier thought it owing to an obscure inflammatory action, and that this was the case here Dr. Mayne did not doubt, for the section showed a distinct red line (as red as that observed around the cornea in iritis) surrounding the indurated portion. The clinical history of induration of the brain is yet far from being known, and therefore the preceding case is of interest. There is this hint to be derived from it, that cases of epilepsy in early life are not always to be considered as hopeless, for moderate antiphlogistic treatment might, perhaps, sometimes lead to a favourable termination.—*January* 29, 1853.

Aneurism of the Aorta.—Dr. Lees exhibited a specimen of aneurism of the thoracic aorta, and gave the following history of the case:—Thomas Mullen, aged 23, was admitted into the Meath Hospital on the 20th of January last, complaining of intense dyspnœa, amounting at times to orthopnœa, with cough and pain, referred to the region of the spine of the left scapula; he stated that he was a bargeman on the Grand Canal, and his business was to load and unload the boats of the Company; that about twelve months ago he was engaged in his usual avocations, and having taken off his coat while heated, he remained so for some time, until he became chilled, and immediately afterwards he had a rigor, which was followed next morning by a severe fit of coughing; he has had the cough ever since. Shortly after, he observed that he was unable to swallow any solid food until well masticated, and unless accompanied by some liquid.

About a month after his first attack, he had some dyspnœa, which gradually increased, and which, with the pain in the supraspinous fossa of the left scapula, compelled him to apply for admission into the hospital in August last. He had then great difficulty of breathing; the inspiration was long and stridulous; the stridor being from below; the expiration was long and growling. He had paroxysms of cough every half-hour, without expectoration, and complained of a severe pain in the left supraspinous fossa. He had also dysphagia. In a short time he improved under treatment, and insisted on leaving the hospital, although he was told that he was far from being cured, and that if he continued at his work he would probably drop dead. He resumed his occupation, however, and for a fortnight was able to work as usual.

In the early part of November last, exertion of any kind was followed by the dyspnœa, and palpitations became so distressing that

[a] See Former Series of this Journal, vol. xxi. p. 315.

he was forced to abandon every kind of labour, and on Thursday last he was again admitted into the hospital. He had now a loud ringing cough, stridor from below, dysphagia, orthopnœa, and very severe pain in the left supraspinous fossa. His voice was husky; the nostrils widely dilated; his face of dusky-red hue; and he complained of soreness in the epigastric region. He never had hemoptysis or hematemesis, or any night-sweats.

Upon examining the chest a considerable degree of flattening was observed in the right infraclavicular region; while on the left side, in the same region, there was a slight bulging, the most prominent part being a little to the left of the centre of the clavicle, and here, when viewed sideways, a slight upward heaving impulse was noticed. The pulsation in the left carotid artery was very feeble, and not at all so distinct as that in the right; the radial pulse was barely perceptible at either wrist, but a little stronger on the right side than on the left; there was no jugular distension. The impulse of the heart could be seen and felt in the epigastric region, directly to the left of the xiphoid cartilage. On the right side a very slight degree of dulness was observed on percussing the clavicle, but below this the sound was normal; on the left side, however, the clavicular region was absolutely dull, as was also the entire of the infraclavicular and upper portion of the mammary regions, as far as the lower border of the third rib; the dulness extended across the corresponding regions of the sternum; there was very little cardiac dulness, and posteriorly on both sides percussion gave an abnormally clear sound.

Respiration was everywhere loud and rough, and partook of the diffused bronchial character; at the root of the left lung there was a thick mucous râle, and also, above the spine of the left scapula. Under the left clavicle a double sound was perceived, resembling that of distant churning, and partaking much of the character of the sounds of the heart; the first being intensified, and resembling the systolic; the second, sharper, and like the diastolic sound of that organ. As the stethoscope was moved downwards, these sounds became fainter, and about an inch and a half above and a little to the left of the ensiform cartilage, the sounds of the heart were distinctly heard, clear and without a trace of murmur.

Last Saturday night, the patient complained of increased difficulty of breathing, and pain in the left supraspinous fossa. Sunday, he was much relieved. At five o'clock on Sunday evening the stridor had increased so much, that the nurse could hear it below stairs. Shortly afterwards it ceased, and she went to look at the man; he was in convulsions, and soon after died.

Upon opening the chest, a large aneurism was found, engaging the transverse and commencement of the descending portions of the arch of the aorta; the great vessels of the neck and upper extremities sprung from the centre of the sac. The tumour had burst by a large irregular aperture into the cavity of the pericardium, which contained large clots of blood. The upper part of the left lung

adhered to the posterior portion of the sac. There was no erosion of the vertebræ. The thoracic aorta, throughout its entire course, was studded with atheromatous deposits. The heart was small and covered with fat. The case affords another proof of the truth of what has been so long taught in the Dublin school, viz., the absence of murmur in aneurism of the thoracic aorta.—*January* 29, 1853.

Caries of the Temporal Bone.—Dr. Gordon exhibited a specimen of caries of the temporal bone and abscess in the cerebellum, taken from the body of a young man, aged 21, a chimney-sweep, who had been admitted into the Hardwicke Hospital on the 28th of January, under the care of Dr. Banks. It was stated, that since he was ten years of age he had been affected with a discharge from the ear attended with deafness, but without any ear-ache. About twelve months since he was attacked with fever, accompanied by head symptoms. His present attack began on the 24th January, with shiverings and intense headach; the pain being of a lancinating character, and chiefly referred to the line of the coronal suture; it was as severe during the day as at night, and was greatly aggravated by the erect position. There was a purulent discharge from the right ear, and pain on pressure in the right parotidean region. The patient seemed drowsy, and required to be questioned loudly before he returned an answer. There was no loss of motion, but the lower extremities were weak, the pupils were dilated, and there was watering of the eyes. The temperature of the surface of the body and of the scalp was natural, the pulse 54, full, and intermitting; the action of the heart was also slow and intermitting. Upon the 30th the pulse in the morning was 44, but rose to 56 towards evening; the dilatation of the pupils had increased, and he had been delirious all night, continually leaving his bed. 31st. Delirium this day of a low character, occasionally accompanied by violent jactitations. Pulse, 60 in the morning, becoming more frequent towards night. Late in the evening of the 31st the pupils became greatly dilated, the left conjunctiva suffused, and the whole surface of the body was reduced in temperature. He died at ten o'clock, P. M., without any convulsions.

The temporal bone was extensively diseased, and matter filled the external meatus. The membranes at the base of the brain were acutely inflamed, and lymph in considerable quantity surrounded the origins of the nerves; it was particularly abundant about the optic commissure. The dura mater covering the carious part of the petrous portion of the temporal bone was detached and perforated by a small aperture. It was separated from the bone by lymph; the corresponding portion of the brain also contained pus; and a large abscess was found in the cerebellum; both lateral ventricles contained a quantity of matter similar to that found in the abscess.—*February* 5, 1853.

Aneurism of the Thoracic Aorta.—Dr. Mayne laid before the

Society a specimen of thoracic aneurism taken from the body of a female aged 37, a servant, accustomed all her life to laborious occupation in washing clothes and scouring. She had enjoyed good health until last November, when she began to suffer from a troublesome cough, difficulty of breathing, and palpitations, which were induced even by the exertion of walking up stairs. These symptoms gradually became so severe that she was obliged to seek admission into hospital. It was then discovered that there was no pulsation either in the radial or brachial artery of the left side; a feeble pulse was with difficulty felt in the left carotid artery; in the arteries of the opposite side the pulse was natural. Upon the left side there was a slight degree of turgescence of the veins of the arm and neck. Dysphagia constituted a prominent symptom, and was equally felt, whether she attempted to swallow solids or fluids. The sense of obstruction was always referred to the upper part of the sternum. She complained, in addition, of cough, seldom troubling her during the daytime, but coming on at night with a violent paroxysm. The cough was hoarse and husky, so as to lead to the supposition that it was laryngeal; still the larynx was not affected; the voice was perfectly natural in ordinary conversation. There was nothing abnormal discovered in the cardiac region, or in the right side of the chest; and on the left side there was only a slight dulness, corresponding to the upper bone of the sternum, and to the left intercostal spaces, extending over a region two and a half inches in every direction, passing inwards as far as the middle line, and upwards to the sterno-clavicular articulation. The stethoscopic symptoms were the following:—The respiratory murmur was healthy on the right side, and also over four-fifths of the left; in the upper portion of the left lung, however, under the clavicle, respiration was bronchial and very feeble, and on the opposite side behind there existed some cause producing bronchial respiration, not exactly resembling ordinary bronchial respiration, for there was no dulness along with it. These signs were considered as affording proof of a tumour deep in the mediastinum, which had probably interfered with the vessels going to the left arm and left side of the neck, and had pressed in some degree on the œsophagus and left bronchus. The question was, whether it was aneurismal,—the probability was in favour of this opinion, this being the description of tumour most frequently met with here. Moreover, she complained of intense pain along the clavicle, and shooting along the left intercostal spaces, of a deep and boring character, a pain very characteristic of aneurism. In addition, on applying the stethoscope over the dull region of the sternum, there was an impulse communicated to it greater than that caused by the normal impulse of the heart, the action of which was in the present case weaker than natural; and, besides, as the stethoscope was moved towards the heart, this impulse was felt growing gradually weaker, and suddenly increasing again at the apex of the heart. There was no *bruit de soufflet* whatever,—a circumstance which corroborated the idea of the tumour being aneurismal.

This day week, late in the evening, she had a fit of coughing, from which she fainted, and remained in a state of collapse all night. In the morning it was evident she was dying; there was no pulse in either extremity; the surface was cold and covered with a clammy sweat; the face was sunken; and though very weak, she was able to tell us that she had a tearing pain over the left side of the chest; her body was doubled up with the pain. The left side of the chest was somewhat dull, but she was so weak that an accurate examination could not be made. She lived twenty-four hours from the first commencement of these symptoms, and finally, died in convulsions. On cutting into the left side of the thorax a large quantity of serum, very nearly colourless, issued forth. The entire of the left pleura was occupied by an enormous coagulum of blood, which compressed the lung against the posterior mediastinum; it came from a small opening in an aneurism of the aorta, in the mediastinum, immediately above the root of the lung. The tumour had extended upwards towards the left side of the neck, having the root of the lung below it, and the œsophagus behind it. The left subclavian artery arose from it; it was adherent to and had compressed the first portion of the vessel, so that a probe could scarcely be passed through it. The left carotid also arose from the tumour, and was somewhat compressed by it, but the left vena innominata was pressed upon to such a degree that very little circulation could have gone on through it; and it was owing to the small quantity of arterial blood sent out that we had not a greater amount of venous turgescence; the œsophagus adhered to the tumour; and the left vagus crossed its anterior surface, with which it was closely united; its recurrent branch was adherent to the posterior part of the sac, and was red, flattened, and unravelled. The left phrenic crossed over the point of the tumour. The feebleness of the respiration at the apex of the left lung, and its bronchial character, are to be referred to the pressure exercised by the aneurismal tumour on the upper division of the left bronchus, which was indented by it. There was no erosion of the vertebræ, though tenderness on pressure over the second and third dorsal spinous processes had been complained of.—*February* 5, 1853.

Chronic Disease of the Larynx; Apoplexy.—Dr. Fleming exhibited the larynx of a man aged 68, who had recently died of an attack of apoplexy. At the age of fourteen, his voice was so fine that he was appointed a member of one of the cathedral choirs in this city, shortly after which, however, he was seized, from exposure to cold, with acute laryngitis. The disease was treated in the ordinary manner, and successfully, so far as the life of the individual was concerned, but his voice remained impaired to such a degree that for twenty years subsequent to the attack he could only speak in a whisper; during the last ten years of his life, his voice had become raucous, but it is remarkable that throughout the whole of this period of thirty years, with the exception of the impairment of the voice, he had no symptoms of laryngeal or pulmonary disease; his appearance was that of a person in perfect health, but from time

to time he complained of many anomalous symptoms of a nervous character; and during the last year of his existence some obscure cerebral symptoms manifested themselves. Shortly before his death, which was sudden, he was seized with fits, following each other in rapid succession for fourteen hours. During the paroxysms, his tongue was protruded far beyond the lips, and so congested, that it was feared the mucous membrane would be lacerated.

Upon examination, *post mortem*, blood in large quantities was found effused into the substance of the hemisphere, and also into the lateral ventricles, and the arteries of the brain were everywhere studded with atheromatous deposits.

With respect to the larynx, the rima was found to be obstructed by numerous vegetations of considerable length, and overlapping one another; the posterior surface of the epiglottis was rough, but the trachea was healthy. The muscles of the larynx, more especially the dilators, were hypertrophied, and the inferior laryngeal nerves much larger than natural.

Dr. Fleming alluded to a similar specimen of obstruction of the rima, exhibited on a former occasion by Dr. Stokes; in which the affection was also strictly local, the trachea and lungs being healthy, but the rima so much encroached upon by the vegetations, that water flowed with difficulty through the aperture.—*December* 4, 1852.

Disease of the Knee-joint.—Mr. Hamilton exhibited a specimen of ulceration of the cartilages of the knee-joint in an early stage. The patient, a female, had long suffered from pain in the upper part of the leg and in the knee, for which various remedies had been tried, with temporary benefit. When Mr. Hamilton saw her, there existed an œdematous swelling of the limb, with tenderness on pressure along the outer and upper part of the leg; it was obvious that matter was confined beneath the fascia. The severity of the pain in the leg completely masked the symptoms of disease of the knee-joint: a deep incision was made near the head of the fibula, and the escape of the matter gave relief from the pain for several days. Another collection of matter in the front of the leg, below the knee, was afterwards given exit to. After the relief from pain in the leg, however, which these incisions afforded, had continued for several days, the affection of the knee became distinctly marked, and the sufferings of the patient became so great, that full anodynes failed to procure rest at night. After some time further had elapsed, the tibia became luxated backwards. Her general health suffered in proportion to the severity of the pain and the loss of rest; she had night-sweats and hectic fever. It was at length found necessary to amputate the limb.

Upon examining the interior of the knee-joint, it was found to contain a small quantity of blood; the cartilage covering the condyles of the femur was superficially ulcerated, but the osseous tissue had not been exposed. The corresponding portions of the articular surface of the patella were also ulcerated, and in one situation the

osseous structure was laid bare. There was no purulent matter in the joint. The sac of a very large abscess existed in the leg, beneath the fascia, and matter had also collected between the bone and the periosteum.—*January* 22, 1853.

Fractured Rib.—Mr. Adams brought before the meeting the case of a man who had fallen from a ladder upon the railings in front of a house; one of the spikes penetrated the right side of the chest, breaking one of the ribs and wounding the lung; a considerable portion of the intercostal muscles was torn away, and a large aperture made into the chest. The man was at once brought to the Richmond Hospital. His breathing was most distressing and laborious; air was rushing from the wound, and the subcutaneous areolar tissue was emphysematous, but owing to the size of the wound in the side of the chest, the emphysema did not at any time extend very far. There was no hemoptysis at any period of the case. The respiration was very rapid; at one time it was 70 in the minute, and generally ranged between 40 and 50, while the pulse was 100. He breathed entirely by the left lung, the action of which was interfered with by the accumulation of air and blood in the right pleura. He was constantly throwing his arms about and tossing himself in the bed; the broken rib was exceedingly moveable, and it was found impossible to keep it steady. Death occurred on the sixth day after the accident.

The pleura was found highly inflamed, and the lung was the seat of acute pneumonia, which had proceeded almost to gangrene at the base of the organ; a layer of lymph covered both the costal and diaphragmatic pleura.

In his observations upon the difficulty of keeping the broken rib steady, Mr. Adams alluded to a case treated by Gerard, where, under similar circumstances, a ligature was passed under the bones, and its fractured extremity thus drawn outwards.—*January* 22, 1853.

Aneurism of the Abdominal Aorta.—Dr. Stokes presented a specimen of a large aneurism of the abdominal aorta, the diagnosis of which had been attended with much difficulty, in consequence of the resemblance which the tumour bore to those cancerous masses that form in the abdominal cavity, and receive an impulse from the aorta. The man had great constitutional suffering, constant irritability of stomach, and frequent vomiting, shortly after taking food of any description. The tumour was very irregular in form, and lobulated upon its surface. The history of the case was as follows:—"A man aged 35, much emaciated, was admitted into the Meath Hospital, January 3, 1853; he had led an intemperate life, had worked hard and been much exposed to cold; nevertheless, he was very healthy and strong until about nine months since, when, without any previous symptoms of indisposition, he observed a small circular tumour in the epigastric region, which in a few days began to pulsate, and as it increased in magnitude caused a severe pain, radiating along the

abdomen, but felt most acutely in the back, and aggravated by any exertion. He continued in employment as a carpenter until ten days before coming to the hospital, when the pain became unusually severe, perfectly incapacitating him from working. About three months after the first appearance of the tumour he began to suffer severely from irritability of the stomach, rejecting his food in a few minutes after taking it. This symptom continued up to the day of his death. He never suffered from dysphagia, nor from pulmonary or cardiac symptoms. His most distressing ailments were, irritability of the stomach and pain in the back. The tumour extended from the epigastrium to the umbilicus, and pulsated violently, especially in the direction from behind forwards; the pulsation was diastolic, but the throwing of the tumour upwards was very remarkable. A few days before death, after a careful examination, Dr. Stokes was led to incline to the diagnosis of aneurism, but did not absolutely declare that such was the nature of the tumour. The circumstances in favour of this diagnosis were a loud bellows murmur in the aorta, not communicated to the vessel from the tumour; for if so, it would have been a reflex murmur, and in that case, would not have been loudest at the arch of the aorta. Considering the intemperate habits of the man, it was natural to suppose that the aorta was diseased. Another remarkable circumstance was, that on further examination, a portion of the tumour was discovered projecting towards the left hypochondrium, about the size of a hen's egg; it felt quite fluid, and on applying the stethoscope over it, there was heard a sharp, intense *bruit de soufflet*, while immediately over the aorta there was heard a deep, hoarse murmur. So far as we know of the murmur produced by pressure of a tumour, it is similar over its whole extent, whereas here there were two distinct kinds of bellows murmur; this tended to strengthen the diagnosis of aneurism. Three days before his death he had a sudden attack of extreme weakness and prostration. His death was easy, although sudden. Among the many points of interest in the post-mortem examination, it was found that, though the patient died of rupture of aneurism of the abdominal aorta, the blood did not take the ordinary course. In such cases in general it enters into the cavity of the peritoneum, which becomes filled with blood—here, however, there was not a drop of blood in the peritoneum. Sometimes the blood makes its way behind the peritoneum, and forms a large diffused aneurism in the loins, which has been mistaken for psoas abscess. In the present case the blood was effused in great quantity between the layers of the mesentery. The heart and its valves were healthy; a few patches of atheroma were seen in the aorta, but it was otherwise healthy as far as the cœliac axis, immediately below which was situated an immense aneurism, which communicated with the aorta by an oval opening, two inches and a half in length, situated in the posterior wall of the vessel. There was no erosion of the vertebræ. The lower part of the sac had given way, and a large clot was contained between the layers of the mesentery.—*January* 15, 1853.

Obliteration of the Vena Cava.—Dr. Banks exhibited a morbid specimen, taken from a man, aged 50, a woolcomber, who, on his admission to hospital, stated that up to two years previously he had been in good health. He was then suddenly seized with rigors, and after this was obliged to rise several times through the night to pass water; he noticed also several clots of blood in the urine. After this he was admitted into the Meath Hospital for scurvy, where he remained for a month, when, considering himself perfectly well, he returned to his employment, but was soon obliged to abandon it from increasing debility. On the 6th of July last he was admitted into the Richmond Hospital, apparently labouring under catarrh of the bladder. On the 1st of September he was transferred to the Whitworth Hospital.

On admission he complained of great thirst, loss of appetite, and general weakness; and through the night was obliged to get up seven or eight times to make water, passing a very small quantity at a time; he had also ardor urinæ. He was pale and anemic in appearance, and presented the sallow complexion of patients labouring under chronic renal disease. He never had any dropsical symptoms, nor did he notice the slightest œdema of the lower extremities. He had on one leg the traces of a varicose ulcer, which had healed about two years ago, having been open for several years; he had varicose veins over his lower extremities, and over the upper part of the abdomen, extending above the epigastrium; there was no abdominal tumour. His urine was examined on admission, and repeatedly afterwards; when first voided it looked exactly like milk, but on standing, there was a deposit of about one-fourth of the fluid. White and creamy oil globules were occasionally seen under the microscope, and through the whole course of the disease pus globules were present in abundance. He suffered exceedingly from irritability of the stomach, and rejected his food, whether liquid or solid; occasionally a small quantity of blood appeared in his urine; he complained of pain and weakness in the loins; but loss of rest and extreme irritability of stomach were the sources of his chief distress. On the 10th of November last a very large anthrax appeared on the lower part of his back, from which, however, after a long and tedious suppuration, he completely recovered. On the 18th of January last all his symptoms became greatly increased; the quantity of pus in the urine was augmented, and the appearance of blood became more frequent. On the first of this month he had an attack of diarrhœa which lasted for three days; subsequently he was attacked with general capillary bronchitis, and this seemed to be the immediate cause of his death, which occurred on the fifth of this month.

On opening the abdomen the kidneys were found destroyed by suppuration to a great extent; they contained a large quantity of purulent matter, and two small calculi were found in one of them. The bladder was small and contracted, presenting the usual appearances of chronic inflammation. On examining the venous system, the inferior cava was found obliterated from its junction with

the iliacs to the liver. The right iliac vein was also obliterated throughout its whole course; the left was open for half its extent. The vena cava was partly converted into a fibrous cord, and presented in some portions the appearance of the sciatic nerve. In other parts clots of blood were found to exist. The hepatic veins were enlarged to, perhaps, one-fourth more than their natural size; the portal veins were also enlarged, but the azygos, where it opened into the superior cava, seemed to be obliterated.

Cases such as the preceding, Dr. Banks observed, are rarely seen in practice. The occlusion of the vein was probably due to a local phlebitis, the vessel becoming plugged up with coagulum, and subsequently degenerating into a cord. There are many cases of complete occlusion of the inferior and superior cava mentioned by Morgagni and Haller. Cruveilhier mentions a case in which, as in the present instance, there was neither dropsy nor œdema. The obstruction probably takes place gradually, so as to admit of a collateral circulation being established. In general the vena azygos supplies the place of the obliterated cava; but Cruveilhier mentions a case where there was no augmention of the former vessel, and he supposes that the spinal plexus was the means of establishing the communication. —*February* 12, 1853.

PROCEEDINGS OF THE DUBLIN OBSTETRICAL SOCIETY.

SESSION 1852–53.

Third Meeting, Thursday, 27th of January, 1853.

Dr. Shekleton (Master of the Dublin Lying-in Hospital) informed the Society that since the publication of the Proceedings of the first Meeting of the present Session, he had another opportunity of testing the efficacy of the douche bath as a means of induction, and had again found it most successful; but, as the mode of application in the present instance, as well as the circumstances calling for interference, differed materially from those already brought before the Society by Dr. Atthill, he thought it would be a matter of interest were he to detail the history of the case shortly.

Mary Fells, a woman having an unhealthy appearance, applied at the Dispensary of the Lying-in Hospital, in November last, to get relief, under the following circumstances:—

She stated that she suffered much inconvenience from the enlarged state of her abdomen, consequent upon considerable dropsical effusion into the peritoneal cavity; and that, in addition to the distress arising from the distention of the dropsy, she fancied herself

pregnant, her menstruation not having returned since the June prior to her application, and some of the other ordinary symptoms of that state having occurred in due order.

Upon examination it was found that she was perfectly correct in the opinion she entertained as to her being pregnant, for by a little manipulation, through the excessively distended walls of the abdomen, the enlarged uterus could be traced to a certain extent, and auscultation announced the existence of the fœtal heart; as far as could be judged, she was at least five months gone with child.

She stated that the dropsical symptoms had not evinced themselves prior to her present pregnancy, but that, less than a month after the cessation of the last catamenial discharge, she suffered some obscure "dragging pains" in the right hypochondrium, which were followed by a brisk diarrhœa (causing her to seek for aid in one of the Hospitals of the city), and that after the urgent symptoms were checked, "she first commenced to enlarge;" having attained her present size in less than four months. She also stated that she was nearly forty years of age, the mother of seven children, four of them alive and healthy; that her own health, up to June last, had always been excellent; and that she had always led a temperate life. She was prescribed for with a view to lessen her present distress, and she was given an admission ticket for her approaching confinement.

On the 8th of the present month (January) she again presented herself, being forced to seek relief in consequence of the increased distress induced by the now enormous distention of the abdomen, impeding considerably her respiration; added to which, she had latterly some hematemesis, and had passed some blood per rectum; her countenance was now collapsed; her belly tense, its walls much attenuated, and her girth round the waist measured four feet two inches. The uterus could not now be traced; neither could we hear any fœtal sounds, but she said that she felt the motions of the child strongly. By vaginal examination the cervix was found not as yet obliterated, and a small fœtal head could be distinguished, presenting above the incompletely expanded neck.

Under existing circumstances it was deemed expedient to induce labour; and thereby to remove so much of the additional bulk as was caused by the gravid uterus, before attempting any operation for the discharge of the effused fluid. This, then, was an admirable case for the douche bath; but it was determined to try it in a simpler form than that which had been previously used,—the apparatus employed being the common elastic bottle-syringe, manufactured by Robertson, of this city, and made use of in the Rotundo Hospital for injecting the vagina, uterus, and rectum with cold water, in cases of postpartal hemorrhage. Accordingly, upon the evening of the 9th, the first douche was applied in the following manner:—She was put upon her left side, in the ordinary obstetric position; a large pan, holding nearly two gallons, was filled with tepid water, and placed upon a stool at a convenient distance from the bed;

another (smaller one) held so as to catch the water as it poured from the vagina, after having played against the os uteri. One person now introduced the bone-pipe at the end of the flexible tube, and with the index finger guided the stream against the orifice of the uterus, which was forced onwards by another person, who held the bottle extremity of the apparatus in the large reservoir of water. The process was continued for about five minutes.

On the evening of the 10th, the lips of the os were found soft and flaccid, and the os itself somewhat dilated. In the same manner, and for the same length of time, the second douche was applied.

On the afternoon of the 11th, the os was found about the size of half-a-crown, when the third application of the douche was made; and labour came on almost immediately after (half-past three o'clock, P.M.), and terminated at half-past ten o'clock at night; being of seven hours and a half duration. The first stage was a little tedious. At about ten o'clock the os was fully dilated; the membranes were then ruptured, and a very trivial quantity of liquor amnii evacuated. It was now determined to administer some ergot of rye, but while it was being infused, the uterus with a powerful effort expelled the child, which for a child seven months gone (according to calculation) was exceedingly small and puny. As a precaution, however, against hemorrhage, the ergot was administered, and also some wine. The uterus expelled the placenta by its own efforts in a few minutes; and there was not any attempt at hemorrhage. She expressed herself much relieved after her delivery, and although the decrease in size was not very appreciable, nevertheless, her respiration became much easier. It may be here stated that the child lived only forty-eight hours.

She continued in this slightly improved state until the 13th; but on the evening of this day, she suffered dreadfully from dyspnœa, and prayed so hard to be relieved from the pressure of "the water," that tapping the abdomen was performed, and twenty-seven pints of straw-coloured serum drawn off; the removal of this quantity reduced the abdomen to a little less than half its former dimensions; after the operation the dyspnœa was much less, and she expressed herself as gratified at the result; but her improved condition only lasted for a day or two; she then gradually retrograded; on the 20th coma supervened, and she died on Friday the 21st, ten days after delivery.

On post-mortem examination, the abdomen was found to be still largely distended, and on being laid open more than two gallons of fluid were discharged; the intestines were seen to be much distended by flatus; there was increased vascularity of the peritoneum lining the pelvis, and lower part of the abdomen, especially on the left side (where the trochar entered), and there were also a few flakes of lymph floating in the dropsical fluid.

The liver was a well-marked specimen of cirrhosis; the spleen was as large as an ordinary-sized liver, and on section had much the appearance of that organ.

In this short history there are some points of interest, independent of the process of induction. In the first place, there was no dropsy of the amnial sac ; indeed, to the almost complete absence of liquor amnii might be attributed the delay in the first stage. Again, the rapidity with which the second stage was concluded,—lasting but a few minutes, although the abdominal muscles were totally excluded from any participation in the expulsive efforts,—is worthy of remark; thus, although the dropsy might have been deemed a complication which would tend to retard to a considerable degree the expulsive stage of the labour,—incapacitating, as it did, the abdominal muscles from taking their share of the parturient efforts,—nevertheless, by being the cause of the diminutive size of the fœtus, it made up for the power it robbed from the uterus, by indirectly lessening the bulk of the body which that organ had by its own unaided efforts to expel. The weight, also, of the effused fluid might have had some considerable share in keeping the uterus well contracted during the third stage, and preventing (after the expulsion of the placenta) any hemorrhage, thus supplying the place of the hand, which in this instance could not have been applied.

But what is more especially to be noticed in the case is the means whereby labour was induced, and the complete success thereof. The apparatus was much more simple and easy of application than the one used in our former case (viz. Kiwisch's); its effect was magical, the os being opened to about one-sixth of its complete dilatation after the second douche, and labour setting in almost immediately after the third, the patient suffering no inconvenience whatever, not even requiring removal from her couch.

The method adopted in this case is, doubtless, the same as that employed by Professor Simpson, differing only in the species of "hand syringe,"—his being, I believe, an elastic cylinder, with a tube at either extremity, the one vaginal, and the other for conveying the water from the reservoir into the cylinder, in order that the hand may force it into the vagina by contracting its caliber, appropriate valves being placed so as to regulate the ingress and egress of the fluid ; while ours was (as described) the common bottle-syringe. I have no experience of the syringe used by Dr. Simpson; but the latter was found to be rather distressing to work with sufficient force for five minutes, and perhaps his would be liable to the same objection ; therefore, should another case present itself for induction, I have it in contemplation to employ the stomach pump, in order to obviate manual distress.

In conclusion, if it be true that the manner in which labour is induced by the douche is, as described, merely by the water acting as an external soft wedge, insinuating itself into the os and between the internal surface of the cervix and the membranes, detaching the latter from the former (which explanation I have every reason to consider correct), I do not see why we should not—by imitating more closely the first stages of labour from without, and by repeated

douches of moderate duration, and at intervals proportional to the duration of the intervals of that stage—in one day bring on the required labour. Upon this principle I purpose acting, when another opportunity presents itself.

Dr. Churchill read a paper on the rhythm of the fœtal and infantile heart. After detailing to the Society the observations he had made, he submitted the following conclusions, as deducible from them: First, That the pulsations of the fœtal heart range from 110 to 160 per minute, the average being somewhat about 136; and the audible sounds double that number, therefore ranging from 220 to 320. Secondly, That, of the two sounds, the first is the weaker, and less distinct; the second, loud and distinct. The first audible only within a short distance of the fœtal heart; the second over a considerable extent of the uterine tumour. Thirdly, That the rhythm may be expressed by dividing the entire period of a pulsation into four parts, and placing a dot under the figures according to the succession of the two sounds, and an accent over the more distinct, as, 1̇, 2̇, 3, 4. Fourthly, That immediately after birth the first and second sound of the heart become equally loud and distinct from an increase in the first sound. Fifthly, That the rhythm changes, and may be expressed thus, 1̇, 2, 3̇, 4. Sixthly, That this peculiarity of the rhythm continues for about a year and a half or two years; and then gradually changes to that of the adult, expressed thus, 1̇, 2̇, 3, 4, with the first sound stronger and longer than the second. Seventhly, That the circulation increases in rapidity immediately after birth, after which it subsides by degrees to the usual infantile standard.

Dr. M'Clintock read the following report of a case of strumous peritonitis. The subject of it was a girl aged sixteen years, with dark hair, florid complexion, of rather inactive habits, and who, previously to this illness, had enjoyed uninterrupted good health. She lived with her parents; they resided in the country, some miles from town, and had nine children, all of whom were apparently free from any trace of disease. My attendance began on the 12th of April, 1851, and during its continuance Surgeon Richardson, of North Frederick-street, occasionally saw the patient, and gave me the benefit of his advice in the treatment. For several days prior to this, she was observed to be dull and languid, and to have a disinclination for all food. The tongue was foul, the pulse quickened, the bowels very much out of order; she complained of thirst and loss of appetite, and the complexion was of a muddy yellow colour, very unlike her natural hue: at the time of this visit the catamenia were present. She was ordered some alterative and aperient medicine, and directions were given for the regulation of her diet. When next seen (some days afterwards) she was in no respect better, and felt so indisposed that she was forced to keep her bed. The pulse was 100, soft and weak; the tongue coated; total loss of appetite; thirst and diarrhœa; she com-

plained of some vague uneasiness in the belly, and of pains like colic before and with the evacuations; firm pressure was borne, however, on every part without giving rise to any unusual discomfort. There existed a slightly œdematous swelling of the feet and ankles, and on making a more minute examination of the abdomen (which seemed to be preternaturally full), I found a very perceptible fluctuation therein. The discovery of these dropsical symptoms led to a particular investigation into the state of her lungs and heart, but no traces of disease could be detected in these organs; every region of the belly was carefully explored, but there existed neither pain, tenderness, nor tumour in any situation. No trace of albumen was present in the urine, though carefully sought for; the secretion, however, was greatly diminished in quantity, of a high colour, and deposited on cooling much yellowish amorphous sediment. The constant presence of bowel complaint, with occasional sick stomach, forbade the employment of any active medical treatment. The other symptoms at this period of her illness were as follow:—Pulse weak, and varying in rapidity from 100 to 120, generally most frequent towards evening; constant thirst; complete anorexia; considerable emaciation; great languor and weakness; tongue thickly coated; alvine evacuations very offensive, and composed of a brownish liquid.

A week subsequently, the abdomen was found to have increased considerably in size, but the diarrhœa had moderated, so that the introduction of mercury into the system was now tried in a more decided manner than heretofore. To the adoption of this mercurial treatment we were the more encouraged, by its receiving the sanction of Dr. Johnson, who was consulted about the case at this time. A strong mercurial liniment was rubbed over the belly and into the groins, night and morning; and small doses of blue pill and opium were substituted for the gray powder, &c., she had been previously taking thrice a day. At the same time the most scrupulous attention was paid to the diet, with a view to restrain the tendency to diarrhœa. Such was reported to be her state and the treatment on May 5th. For some days before and after this date, there was observed to be a very manifest increase of fever towards evening, the pulse rising to 120 or 128, and along with this, great flushing of the face, thirst, and headach; in this stage, also, there was for the first time observed to be some deep-seated tenderness in the epigastric region.

On the 12th of May, there was incipient ptyalism, and contemporary with this, an amendment took place in some of the more important symptoms. The abdomen began to diminish, the urine to increase in quantity, and to appear of more natural quality; the pulse, too, was abating in frequency, and the tongue losing its foul coating.

Her recovery may be said to date from this epoch, although it was much retarded by one or two partial relapses, and not complete for some months.

After the effusion into the peritoneal cavity had been entirely

absorbed, and all the bad symptoms had disappeared, there remained so much emaciation and debility, together with an irritable state of the gastro-intestinal mucous membrane, as to require a more than ordinary degree of prudence and caution in her general management. Menstruation did not recur for three months, but has continued regular; and her general health, too, has since been unimpaired. To the above cursory outline of this case may be added the following particulars:—Diarrhœa was a constant symptom all through the patient's illness. In the beginning we were not over-solicitous about checking it; and when we attempted to do so, it proved most obstinate, and consequently contributed not a little to pull down her flesh, and exhaust her strength. The urine was tested several times in the usual way, but on no occasion was the presence of any trace of albumen found. It is deserving of particular notice, that the abdominal tenderness did not amount to anything very marked or decided, and had no existence until a comparatively advanced period of the disease, certainly not until some days after the symptoms were fully developed, and after effusion had taken place into the abdominal cavity. Upon this symptom Dr. Abercrombie thus expresses himself:—"In other cases there has been no actual pain, but a feeling of tenderness, which gave rise to uneasiness on pressure, or when any part of the dress was tight over the abdomen; but in many cases the disease steals on to an advanced period, without any complaint either of tenderness or pain;" this was literally verified in the case before us.

From the very commencement of the above case the pulse was the reverse of inflammatory, being weak and compressible, so as plainly to contra-indicate bleeding, even did the other symptoms seem to require it—which, in my opinion, they did not.

It will, no doubt, have been observed what a rapid change for the better followed the appearance of ptyalism. This improvement was first manifested by an increase in the quantity of urine, and a diminution in the bulk of the abdomen, as shown by daily measurement, thus agreeing in every particular with the experience of Sir H. Marsh, who, speaking of cases of this description, writes:—"In many instances I have noticed a marked subsidence of the symptoms, a copious secretion of urine, and a diminution of the abdominal distention to have been coeval with the first perceptible effects of mercury upon the constitution." Although the use of mercury was persisted in for some days after it had produced ptyalism, salivation did not take place, and even the former effect of the drug was exhibited in a very trivial degree; it was sufficient, however, to indicate that the system was brought under its influence, and no more than this was requisite to conquer the malady.

In about a fortnight from the first appearance of amendment, the disease was so far subdued as to permit of a moderately generous diet being used; among other things she got a liberal allowance of ass's milk, from the employment of which she seemed to derive marked benefit. After the administration of mercury was stopped,

she was ordered small doses of hydriodate of potash and liquor potassæ thrice daily, which possibly may have promoted the absorption of any fluid remaining in the peritoneal cavity. After the abdomen had nearly returned to its normal size, an indistinct tumour was perceptible in the epigastric region, which did not disappear for some weeks. I would hardly have thought this worth mentioning, but that Sir H. Marsh observed the same in some of his cases.

There can be little doubt, I imagine, that this case is to be referred to the same category with those which Sir H. Marsh and Dr. Churchill have described under the name of "Strumous Peritonitis with effusion:" the resemblance falls short, however, in two points—non-essential ones, I admit, but still worthy of being noted. First, in the case just related, no abdominal pain or tenderness was present until after the other symptoms (including the peritoneal effusion) were fully established: and secondly, neither the patient herself, nor one of her brothers or sisters—and be it remembered they were nine in number—bore any trace of scrofula; all were alive, and, with two exceptions, in rude health; the exceptional instances being the one case I have recorded, and a younger brother, who had three or four slight epileptic attacks. I think it right just to mention these facts, although I would be unwilling to rest on them the assumption that the above case did not partake of a strumous character; nevertheless, it plainly teaches us, that the disease in question does not by any means require for its production a well-marked strumous diathesis. Dr. West agrees in opinion with Baron, that this disease is invariably associated with the tuberculous cachexia; and moreover affirms, "that the occasional recovery of a child in whom the symptoms of chronic peritonitis have existed, by no means disproves that connexion between it and phthisical disease, of which dissection in fatal cases affords such convincing proof." As bearing upon this point, it may not be uninteresting here to mention, that this girl's father, when a young man, was pronounced by the late Drs. Cheyne and Colles to be in pulmonary consumption; and although he did not die, he has ever since been what is commonly called asthmatic, and has flattening below the left clavicle, with dulness and feeble respiration in that situation.

In studying the pathology of this affection, we should not confine our attention merely to the abdomen, or regard this lesion of its serous membrane as peculiar to the peritoneum; on the contrary, it is to be viewed, I think, as a particular example of an affection to which all the great serous cavities of the body are liable; thus we find this tubercular form of inflammation attacking the arachnoid, the pleuræ, the pericardium, the peritoneum, and also the synovial membranes. In each of these situations the disease presents a certain group of symptoms, which can hardly fail of being recognised, so strong is the family likeness between them; and in all these cases it is the mechanical operation of the liquid effusion which chiefly regulates the character and modifications of the symptoms.

It is interesting to observe, however, that the same medicine, used with the same restrictions and cautions, is the *nobilissimum remedicum* in, I may say, all these different forms of disease. To Sir H. Marsh undoubtedly belongs the credit of first pointing out the utility of its administration in strumous peritonitis; to Surgeon O'Beirne the profession is indebted for the successful application of mercury to the treatment of scrofulous affections of the joints; and Drs. Percival, Dobson, and Cheyne, long ago insisted upon the great value of this same agent in tubercular meningitis.

Dr. Lyons read a short biographical memoir of the late Professor Kiwisch von Rotterau, so well known by his obstetric writings; and more especially as being the first to apply the douche for the induction of premature labour.

Case of Maniacal Delirium, in which Chloroform was administered internally. By J. R. Harvey, A. B., M. D., M. R. C. S. England, Physician to the South Charitable Infirmary and to the Lying-in Hospital, and Professor of Midwifery in Queen's College, Cork.

In our present very limited knowledge as to the powers of this remarkable agent any new facts cannot fail to be interesting. Not much is known of its effects when taken into the stomach, and, as far as I am aware, no account has appeared in the Irish periodicals of cases in which it was administered, except those by Mr. Butcher and Dr. Duncan, and in these it was given for the relief of delirium tremens. The following case affords reason to hope that it will yet prove more extensively applicable. It would seem not unlikely that it may produce calming effects in cases of insanity, which cannot be obtained from opium or other ordinary narcotics; but more materials must be collected before we can draw any decided inferences.

The quantity given in the case I am about to narrate was, I believe, larger than in any previous one. On Wednesday, the 12th January, 1853, I was requested by Mr. Oakshott to see Mrs. ——, aged 44, who had been labouring under symptoms of fever since the previous Saturday. The case would have been considered slight, but that her agitation and hurriedness of manner were more than in proportion to her other symptoms. There was not much headach, thirst, or heat of skin; pulse not above 88, but rather weak; bowels and kidneys acting fairly; the tongue was closely coated with a white creamy fur, such as frequently degenerates into a dry and black condition in the latter stages of typhus. There was little change for the next two days, except that her nights became more and more disturbed, and her manner more agitated and indicative of great but undefined apprehension.

The night of Friday, the 14th January (the seventh of her illness), was passed without sleep, and she was frequently delirious; and next morning her manner was unusually hurried and anxious, but it was somewhat quieted for a while under a mixture containing ammonia and camphor. She readily consented to the removal of her hair, and she enjoyed the application of cooling lotions to the head. In the evening, the agitation and sleeplessness continuing, her feet were fomented, and she had a draught containing fourteen minims of Battley's sedative liquor, and twelve minims of antimonial wine, in camphor mixture.

This produced no sleep; she was violently delirious, and constantly attempting to get out of bed throughout the night, and, as the succeeding day advanced, her condition was altogether that of an insane person. The tongue cleaned in part, and her pulse became accelerated, and for the following three days and nights any one who had not seen the case from the commencement would have considered it one of pure mania. During this time opiates and antimonials combined, both in full doses (40 minims of tincture of opium, and the same quantity of antimonial wine, followed by smaller quantities), frequently repeated, were equally without effect. The violence, the sleeplessness, the maniacal gestures and actions, continued unabated, and she required the constant vigilance of three or four attendants.

Under these circumstances it occurred to Dr. Townsend, the benefit of whose assistance we had for the previous few days, whether chloroform might not afford results similar to those obtained in delirium tremens, and, accordingly, there appearing nothing to prevent a trial of it, we resolved to administer a drachm of the medicine in water, precisely as had been done in Mr. Butcher's case. Mr. Oakshott gave it himself, and carefully watched its effects;—I give the particulars of his memoranda taken at the bedside:

"Wednesday night, Jan. 19.—Pulse 112. 25 minutes to 11 o'clock. Gave a drachm of chloroform; she gradually ceased talking. 15 minutes to 11. Asleep. 11 o'clock. Pulse 84; respirations, 22. 3 o'clock. Awoke, but was calm. Half-past 3. Arrow-root and wine; returned to sleep. Half-past 4. Awoke, wild; pulse 92; dose repeated. 20 minutes to 5. Fast asleep; pulse 76.

"Thursday, the 20th.—Sleeping nearly all day; tea and plain arrow-root. To have a castor-oil draught, with compound tincture of senna. 3 o'clock, P.M. Pulse 78; respirations 20; wine and arrow-root."

In the evening she was comparatively quiet, but the maniacal excitement was easily aroused: it was determined to continue the chloroform, and foment the feet. The memoranda of Thursday night were as follows:

"20 minutes to 12. Gave a draught (1 drachm) of chloroform; pulse 88; respirations 20. 10 minutes to 12. Asleep. 12 o'clock. Pulse 72; respirations 18. Quarter-past 12 o'clock, and again at 1 o'clock. Vomited and strained; went to sleep immediately; slept

till half-past 3, when she took wine and arrow-root. Half-past 4. Pulse 88; respirations 20; she was unsettled; gave another dose. Quarter to 5. Asleep. 5 o'clock. Coughed and awoke; very violent; gave half a drachm of chloroform. Quarter past 5. Asleep."

She then slept continuously till 3 o'clock, P. M., a period of nearly ten hours, and awoke greatly calmed.

On Friday night she took a drachm at a quarter past 12 o'clock, and at 25 minutes to 1 was fast asleep. This night was passed very quietly; the pulse from 58 to 60, soft and full, and respirations 18. After this the chloroform was suspended, the bowels were relieved by a warm aperient, and she had moderately supporting diet.

On the afternoon of Sunday, the 23rd, there were indications of returning excitement, the pulse rose to 96, and she became restless. "A drachm of chloroform was administered at 10 minutes past 3, A. M. At a quarter past 4 she was fast asleep. At half-past 4, pulse 64; respirations 18. Half-past 8 o'clock. Still asleep; pulse 80; respirations 20."

From this time she steadily improved, and her recovery was complete.

This lady had a similar attack of illness about sixteen years ago, and she since lost a brother by fever. He had violent maniacal delirium, under which he sank.

Case of Abscess in the Head of the Tibia, with Operation. By R. R. Gelston, M. D., Surgeon to the County Infirmary and City Infirmaries, and Physician to the City Gaol and St. John's Fever Hospital, Limerick.

John O'Donnell, a labourer, of scrofulous diathesis, aged 21, was admitted into the County Limerick Infirmary under my care, about five years ago, for violent inflammation of the periosteum covering the upper third of the right tibia, induced by a kick from a horse, received eight or nine days previously to admission. There was much pain upon the slightest pressure, and the limb was considerably larger in circumference than the other. I first tried what counter-irritation with iodine and blisters would do, in conjunction with mercurial treatment, but the pain not succumbing to this, I laid bare the tibia to the extent of six inches, and freely divided the periosteum, which relieved the pain, and finally reduced all enlargement; he was discharged perfectly cured in about three weeks after admission.

This patient was again admitted under my care on the 27th of November, 1852; when he stated, that he received a blow from a stick immediately on the tubercle of the right tibia, producing the same symptoms, but in greater severity than he suffered on the former occasion. I again tried mercurials and blisters, but with such little benefit, that I freely divided the periosteal covering of

the tibia, which was followed by much relief, continuing for about a week, when greater pain, and of a boring character, again set in, preventing sleep. The head of the affected tibia was now considerably enlarged; and I felt satisfied that there was an abscess in the medullary canal of the bone, and advised trephining it. This was done at once, and upon removing a circular piece of bone, fully four ounces of purulent matter escaped; this was done on the 17th of March, and the quantity of pus which continue freely to discharge itself through the artificial opening was surprising. The poor fellow slept well the night after the bone was trephined, and continued to do so; in two days all pain disappeared, and he rapidly progressed towards recovery. The size of the piece of bone removed is shown by the annexed outline.

On a New Method of detecting Strychnia and its Salts. By Edmund William Davy, A.B., M.B.T.C.D., Lecturer on Chemistry in the Carmichael School of Medicine, &c.

In the course of some recent experiments on strychnia, I discovered a new method of detecting this alkaloid and its salts. It is as follows:—To a little of the strychnia, in powder or small crystals, add a drop of undiluted sulphuric acid so as to moisten it, then a little of the ferridcyanide of potassium (red prussiate of potash), either in powder, or a drop of a strong aqueous solution, and mix them well together, when a fine deep violet colour will be immediately produced. This test is one of such extreme delicacy, that a quantity less than the 1–1000th part of a grain will afford an intense violet, which can be extended over a considerable surface. As an additional proof I dissolved the 1–50th part of a grain of strychnia in 1000 grains of distilled water. One drop of this solution, weighing one grain, on being evaporated on a surface of glass, and treated as referred to, afforded a faint but characteristic violet shade, though containing only the 1–50000th part of a grain of the alkaloid.

I am aware of the beautiful and delicate test for strychnia proposed first by M. Lefort, and afterwards by Mr. Lewis Thompson, viz., by moistening that alkaloid with strong sulphuric acid, and then adding to it a little of the bichromate of potash, when a fine violet colour, like that I have stated, will be produced.

That method has hitherto been justly regarded as the most delicate and characteristic test of strychnia, and was the one lately employed by Professors Graham and Hofmann, in their experiments on the alleged adulteration of pale ales with strychnia.

The test which I have proposed appears to me to be fully equal in delicacy to M. Lefort's, whilst at the same time it possesses certain advantages over it. The violet colour produced in my test is less fleeting than in M. Lefort's. In the latter the violet quickly changes

to a brown or olive shade, whereas in mine the violet passes more slowly into a light brick-red colour, which remains for several hours, and is itself highly characteristic. My test seems, generally speaking, less affected by the presence of organic matter than M. Lefort's; thus in the latter, the presence of a little alcohol, ether, or sugar (with the strychnia), destroys the test immediately, and instead of the violet colour, a green is produced, from the oxide of chromium formed; whereas in like circumstances, using my test, the characteristic violet colour is produced, being little affected by the presence of these substances. From comparative trials with both tests, I find that the vegetable matter in ale and porter has a less injurious effect with my test than with M. Lefort's. I may remark, that in cases where strychnia is present along with organic matter, it is desirable that the latter should first be separated as much as possible from the alkaloid, by some of the methods recommended for that purpose, as the presence of organic substances interferes more or less with the application of either test, and it is necessary in both tests that the sulphuric acid employed should be strong, for I find that if the acid is much weaker than sp. gr. 1·488, the desired effect will not be produced.

On a New Mode of Producing the Instantaneous Coagulation of Blood in the Arteries. By Dr. Pravaz, of Lyons.

The mode which M. Pravaz proposes for coagulating the blood in arterial vessels consists, says M. Rayer, through whom the communication was made, in injecting a few drops of solution of perchloride of iron at the maximum of concentration. This injection should be introduced very obliquely through the walls of the artery by a sort of gimlet motion of the injection instrument. To a trocar is adjusted a syringe, the piston of which should be worked by a screw, in order that the injection may take place gradually, and that the quantity of fluid injected may be accurately measured; it is also necessary to arrest momentarily the course of the blood in the vessel, and to take some other precautions which will be more fully understood after the description of the experiments made by Dr. Pravaz, in the Veterinary School of Lyons, in presence of M. Lallemand, and of M. Lecoq, Director of the School. First, The carotid artery of a full-grown sheep having been laid bare, the circulation was interrupted by compression made with the thumb and index finger at two points, about an inch and half or two inches distant from each other. There might be a spoonful of blood intercepted in this space. A puncture was made very obliquely across the wall of the artery, and three or four drops of solution of perchloride of iron were injected. To accomplish this, two complete turns were given to the screw of the syringe, each of which corresponded to the expulsion of about two

drops. Immediately after the injection of the salt an augmentation in the density of the blood was felt by the compressing finger; the clot could be perceived *forming* rapidly, and four minutes after, it was considered that the artery might be left to itself, and all compression withdrawn. In fact the coagulum did not change its position, and was felt in the same place during the eight following days. Second, The experiments performed, in the same manner, on the carotid artery of a horse, gave a similar result. The portion of artery in which the circulation had been suspended was upwards of three inches long, and might contain five tea-spoonfuls of blood. Eight or ten drops of solution of perchloride of iron were introduced, Dr. Pravaz having ascertained that about two drops of the salt were necessary to coagulate a tea-spoonful of blood. In four minutes the clot had formed in the artery, as in the case of the sheep; it was hard and resisting, and was not displaced by the impulse of the blood during a quarter of an hour. The portion of artery which had been experimented on was then removed, and, on slitting it open, its internal surface was found to be roughened, and to present granulations and longitudinal striæ in the entire extent of surface occupied by the clot. Third, The experiment was repeated on another horse in the same manner, and with similar *immediate* results. This animal, however, was kept with the artery exposed during eight days, in order to admit of the phenomena being from time to time observed. It was established that the hardness of the carotid extended more and more above and below the original clot. On killing the horse, at the end of this time, the interior of the carotid artery was found, on examination, to present three distinct coagula, which obliterated the vessel for the extent of ten inches. The centre clot corresponded to the injection; it was deeper coloured, wavy, and granular, and was nearly an inch and a half in length. To recapitulate: after the injection of the perchloride of iron, four minutes and a half were sufficient to produce in the carotid arteries of both sheep and horses the formation of a coagulum sufficiently firm and adherent to resist displacement by the impulse of the blood coming from the heart.

Such is the important fact, observes M. Rayer in conclusion, which Dr. Pravaz has demonstrated in presence of M. Lallemand and M. Lecoq. Dr. Pravaz is still engaged in prosecuting his researches; but has published these, his first results, in order to attract the attention of those inclined to investigate the subject, and of practitioners, to this method of accomplishing the obliteration of arteries. His observations have hitherto been purely experimental, and conducted so as to ascertain directly the mode of action of the coagulating agent which he employs. To apply it to the cure of aneurisms in the human subject the proceeding should be modified as follows: the perchloride of iron must be introduced into the aneurismal sac, the circulation having been previously arrested by compressing the artery beyond the aneurism, that is to say, between the tumour and the capillaries. The quantity of styptic liquor em-

ployed should be in proportion to the volume of the aneurismal tumour, and the duration of the compression should be from four to five minutes. These conditions are sufficient, according to M. Pravaz, to produce a compact voluminous clot, capable of obstructing the artery like a cork, and of producing the same effect as a ligature.—*Revue Médicale Française et Etrangère*, January 31, 1853, p. 83.

On the Anti-Hemorrhagic Effect of Chloroform during Operations.
By M. Chassaignac, Surgeon to the Hôpital Saint Antoine.

Surgeons who have performed a great number of operations with the aid of chloroform must have observed the small amount of blood lost during severe operations by some subjects under the influence of this anæsthetic: for my part I have long remarked it. Without attaching importance in other respects to this peculiarity, I could not avoid comparing the trifling nature of these losses with the large quantity of blood generally poured out in capital operations in which chloroform is not employed.

Reflecting on the mode in which such a result might be produced, it soon occurred to me that an individual in whom the physical and moral agitation caused by an operation raises the pulse to 120, must lose more blood from an opened artery than one in whom the pulse does not exceed 60 beats in the minute, and I thought that we might find in this fact something extremely advantageous, and having a direct practical application in reference to hemorrhages occurring during operations. Still, this was so far but a surmise, resting partly, it is true, on impressions sufficiently vague, but also supported by this physiologically incontestible reasoning, viz. that a wounded person whose pulse beats 120 in the minute must lose, in a given time, all other things being equal, more blood than one in whom it does not exceed 60.

But to draw conclusions, and, above all, conclusions capable of practical application, something more is necessary than surmises and reasoning, however plausible they may be. I therefore resolved to submit to special observation in this respect a certain number of patients operated on in the Hospital Saint Antoine, and I am now desirous of drawing the attention of surgeons to the results thus obtained.

The observation of eleven cases, viz, three of amputation of the thigh, one of amputation of the leg, four of removal of the breast, one of total resection of the first metatarsal and first cuneiform bones, one of resection of the humerus, and one of resection of the inferior maxillary bone,—has furnished me with the opportunity of establishing, that, whether during the period of collapse, or that of anæsthetic tolerance, the losses of blood which usually attend such cases were vastly lessened; and that, especially in two subjects, one a female, from whom the breast was removed, and the other a man on whom amputation of the thigh was performed, it might almost

have been said that the operations took place without hemorrhage. In the latter case, it is true, the compression of the femoral artery was maintained with great precision; still, it was evident that the chloroform contributed to the arrest of the blood, for when I desired that the compression should be suspended, the entire of the wounded surface, with the exception of the principal artery, which furnished a very moderate jet, gave so trifling a flow of blood that we were obliged to wait for the cessation of the anæsthetic state, to be able to apply ligatures to the secondary arteries. In the female, whose right breast was removed on account of a gland-like tumour, a teaspoonful, literally, of blood was not lost during the operation. In this case I committed the mistake of not awaiting the restoration of consciousness before dressing the wound; and—a point well worth attending to—hemorrhage supervened, which was not discovered until some time after the application of the dressing, some hours, in fact, after the patient had been replaced in bed.

It is not only with respect to arterial hemorrhage that chloroform may be considered as diminishing the loss of blood; it has a similar effect on venous hemorrhage. It is known, in fact, that the badly restrained efforts of a suffering patient predispose him in a peculiar manner to the latter variety of loss of blood; for he is under the influence of two causes which play an important part in this kind of hemorrhage: first, imperfect respiration, and next, energetic muscular contractions. These two causes are removed by chloroform, and are replaced, throughthe effects of this agent, by a state of collapse or anæsthetic tolerance.

In order to give a rational account of the forces in virtue of which the phenomenon we are considering takes place, it will suffice to compare briefly the condition of a patient operated on in the ordinary state, with that of an individual who has reached the period of tolerance.

In the former, the dread of the operation about to take place accelerates the number of the pulsations, increases the impulse of the heart, and retards the free return of the venous blood, not only in csonequence of the disturbance of the respiration, but also of the efforts made by the patient, while restrained by the assistants. Thus, increase of the number of the pulsations, augmentation of their intensity, and arrest of the venous blood, are the circulatory conditions of the patient submitted to operation without the employment of anæsthetics. What do we observe when the latter have been administered? Precisely the contrary: diminution of the frequency of the throbbing of the pulse, weakening of its intensity, and a normal state of the respiration and of the venous circulation. Comparing such opposite conditions, it is not difficult to understand the difference of the result observed in reference to the hemorrhagic tendency.

Let us now consider what practical conclusions may be drawn from what has just been laid down. Under this head, and as the result of my observations, I may observe:—1. That the sedative

action of the chloroform, during what has been styled the period of tolerance, diminishes in those who are operated on: *a.* the number of the pulsations; *b.* the strength of the impulse of the heart; *c.* the arrest of the blood, which is a cause of venous hemorrhages. 2. That the diminution of hemorrhage, during the period of tolerance, may be a real advantage in the case of operations involving the possible opening of a great number of vessels. 3. That if it is sometimes useful, as has been recommended by some surgeons, not to apply the dressing until a certain time has elapsed after an operation, this procedure may be said to be obligatory after the employment of chloroform, the chances of an ulterior hemorrhage being greater in proportion as less blood has been lost during the operation.—*Le Moniteur des Hôpitaux*, 3rd March, 1853, p. 210.

[The fact of the action of anæsthetic agents in lessening the hemorrhage during operations has been noticed incidentally by several English writers, but as this very important result of their use has not, so far as we are aware, been so carefully described and commented on by any surgeon as in the foregoing communication of M. Chassaignac, we have thought a translation of his remarks would not prove uninteresting to our readers.—Ed.]

Remarks on Pellagra. By Dr. José Martinez, Physician at Grávalos.

I wish to call attention to a very severe disease, a scourge of the human race, which has for centuries been as common as it has been misunderstood in Rioja and the neighbouring provinces, and probably through the entire of Spain, or perhaps in all the west: I allude to Pellagra. This disease, apparently the legitimate offspring of the primitive and contagious leprosy, attacks one-tenth part of the population of the villages, and is little less generally prevalent in the rest of the country. There is no exaggeration in this assertion; it is a fact which I have demonstrated to several of my professional brethren, and which I can easily prove to others. The town of Grávalos, where I reside, is almost all as much or more infected than the four municipalities of Oviedo; and few are the towns in the province of Logroño in which I should not be able to point out cases in greater or less number. And at all events I can state, with the utmost confidence, that among the mendicant classes pellagra exists recognisable at a glance in an eighth or at least in a tenth part of their number. The peculiar advantages which a residence in this locality affords, in consequence of the number of visitors who resort to its mineral waters; my frequent visits and consultations within a certain radius of my native district, where I have practised for more than thirty years; and my incessant study of the subject, have acquired for me the important power of recognising the occult cause of the majority of chronic diseases. If pellagra, which is assuredly nothing more than a variety of leprosy, is implanted in the generations of this country, as historical data render probable, it is also

disseminated through almost all the races of the globe. There is no doubt that this and some other destructive principles have been transmitted from generation to generation. There does not exist a single case of accidental leprosy or pellagra. Pellagra is evidently hereditary, and it is as evidently non-contagious. Pigs as well as man are subject to a species of leprosy, and in them, too, it is seen to be hereditary, since in the same herd the disease will appear exclusively in those of leprous descent. Such is the true remote cause of pellagra; and the sun and wretchedness (which have, perhaps, been the proximate means of its original development) are merely secondary causes, although they have been very generally received as its true sources; and it is in this point of view it may be said that pellagra is the inheritance of misery, and that, like a noxious reptile, it creeps forth under the vivifying influence of the vernal sun. The proximate cause, as is the case with other diseases, is unknown; none of the opinions heretofore advanced are satisfactory, and we are left in doubt between the alterations of the sanguineous fluid of Casal (which appears the most rational), those of the nervous system, and those of the liver. Compelled to give an opinion, I should be inclined to attribute the disease to an alteration *totius substantiæ*, believing that all the tissues, or, in other words, the entire body, has been constructed of depraved materials, and that the blood, as the element of organization (*anima carnis*), in the first instance suffers from the effect of the congenital dyscrasia. It is a dyscrasia, in fine, the essential nature of which, although specific, or *sui generis*, is unknown,—a pathological individuality. Scurvy, rickets, and many other diseases which are supposed to proceed from a scrofulous taint, are the effect of the pellagric virus. The latter shows itself from birth and early infancy, and carries off numbers of children, particularly if the mother be the parent from whom the taint is derived. About the age of puberty many are chlorotic from this cause; nevertheless it is during adolescence that the cachexy is least troublesome. In adult age, after insolation, or after febrile symptoms of an intermittent type, preceded or not by slight or severe gastric or nervous derangements, the shadow of the coming many-headed hydra appears on the back of the hand,—in Rioja as an affection of the skin, so slight that at times it is easy for even experienced persons to fail in recognising it. This affection of the skin, which, as Casal says, cannot be confounded with any other, because there is none other "of its form and colour, nor of its name, nor of its kind, nor having its peculiar conditions," and which is the pathognomonic sign of pellagra, I have observed in some children, recently born of pellagric parents, to present a beautiful rose-colour and circular radiated figure; in adults it is distinguished among other things (which it is not easy to describe, however perfect an idea one may have of them), by an erythema in the metacarpal regions, and sometimes in the metatarsal and other parts, of a dark shining or glistening appearance, inclining at times to an erysipelatous form, presenting horrible rugged crusts, which subsequently separate in dense scales,

leaving the subjacent skin red, smooth, and shining, and sometimes with depressions. However, I do not intend now to give a detailed account of the disease; my sole object in bringing forward this very slight notice is to show, pending the publication of a monograph I am preparing on the subject, that this apparently trivial rugous and shining erythema of the metacarpal regions, this "*quasi lucens quippiam*," according to Leviticus, ought to arrest the attention, and that, if it be attended with any antecedent or simultaneous gastric or nervous derangement, pellagra will always, or almost always, be found to exist. In conclusion, I would say that the pellagra (which ought to be called the disease of misery) accompanies in disguise a multitude of dyscratic and dynamic affections, without external manifestation of its presence; that the herpetic eruptions have much connexion with it, and I even possess records of cases which would justify the suspicion that the two affections are branches of the same tree; that there are no remedies capable of effecting the radical cure of pellagra, it being false that such has ever, even in a single instance, been effected,—that the only palliatives are cooling and sweetening measures, as vegetable juices, emollient baths, sometimes, in the nervous form, warm saline and other mineral waters; that prophylaxis, by forbidding the marriage of persons tainted with the disease, is the essential point, and as this is impossible, that infected mothers should at least be prohibited from nursing, and thus conveying a second dose of the poison to their offspring.—*Boletin de Medicina, Cirugia y Farmacia*, January 2, 1853, p. 4.

On Pellagra. By Dr. P. Mérier.

The following general remarks are appended to the reports of two cases of pellagra with suicidal lypomania, published by the author in the Gazette des Hôpitaux. Though Dr. Mérier's observations contain little that is new, we think it may be not unprofitable to reproduce them here in connexion with the translation of Dr. José Martinez' paper on the same disease.

What is the nature of pellagra? Is it a general or a merely local affection? It is evidently a general disease, having its essential seat in the internal organs and viscera. The local, external, cutaneous affection is, in my opinion, merely accessory, and would assuredly be of little consequence, and could not compromise the life of the patient, were it not always accompanied by a much more serious, internal, and general condition. I believe, then, that pellagra is essentially an internal general disease, the characteristic and *pathognomonic* symptom of which is, indeed, the cutaneous affection, but whose nature, seat, essential cause, and most important lesions, are to be found in the internal organs; so that I should be tempted to admit the possibility of the existence of pellagra, without the manifestation of its *pathognomonic* symptom, and without external lesion, and I feel persuaded that there are many instances of such latent pellagras. Let us admit, for example, that it were possible to withdraw

completely a pellagrous individual from the action of the sun (which would, no doubt, be very difficult, for persons affected with pellagra have an almost invincible tendency to expose themselves continually to it), and assuredly the external character will not be manifested, and still the severe internal general state which, in my view, essentially constitutes the disease, will not the less exist. The two cases I have reported furnish us, to a certain degree, with proof of this; thus whenever I succeeded in keeping my patient for some days secluded from the solar rays, I observed the intensity of the local symptoms to be remarkably lessened, and during the winter they altogether disappeared. Still it could not be said that the disease itself had terminated, since with the first return of heat it re-appeared in all its intensity, and attended with its train of local and general symptoms: it existed, but in a latent state. I therefore feel warranted in saying that pellagra is not a local external affection, but a disease whose nature and cause are internal, and whose essential seat is in the internal organs; and, still further, that there may be, and doubtless do exist, latent pellagras, especially in the countries in which the disease is endemic; that, consequently, the sun, or, to speak more correctly, insolation, plays indeed an important part in this affection; but that it is not the only agent, the essential cause, although its action appears to be necessary, and most frequently indispensable, to the external manifestation of the affection.

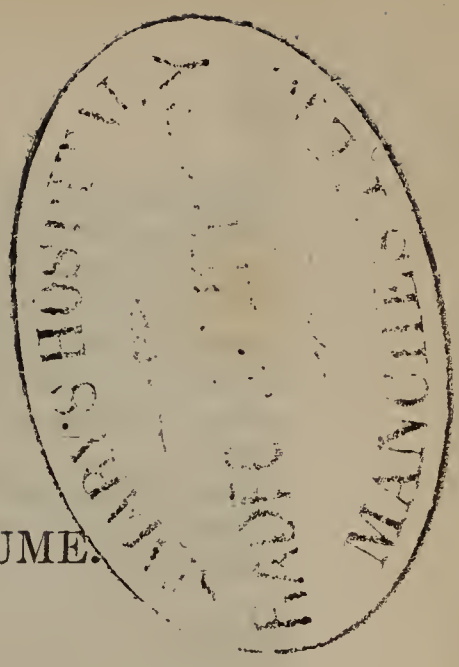
Having had so little opportunity of observing this disease, I can not hazard an opinion as to its causes; but would remark, that neither of my patients had made use of maize, and that, consequently, M. T. Roussel's opinion with respect to it is not entirely correct. As the eruption may be absent, or disappear if the patients are from any cause withdrawn from solar influence, the diagnosis should not be solely looked for in external phenomena, but chiefly in the general state, diarrhœa, univeral and gradual debility, indolence, apathy, extreme desire for remaining in bed, marasmus, &c. As to the progress of the affection, it is invariably slow, and characterized by remissions always occurring during the winter, at which season the local symptoms sometimes wholly disappear, and even the general state becomes improved. The only treatment I am aware of, suitable to these cases, is to keep the patients as much as possible out of the reach of the intense solar rays, to stimulate them, if possible, by labour and moderate exercise, and to give them a nutritious diet, calculated to counteract the extreme debility into which they gradually fall. The prognosis is always unfavourable, and the disease generally terminates, sooner or later, in death; this has been the result, I believe, of all the cases which have been observed in the hospitals of Paris, and in the central departments of France.—*Gazette des Hôpitaux*, February 17, 1853, p. 84.

On the Employment of the Albuminate of Iron and Soda as a Therapeutic Agent, in various Cases in which Ferruginous Preparations are indicated. By Angelico Fabbri, Pharmaceutical Chemist at Gubbio.

Simple contact, at the ordinary temperature of the atmosphere, of white of egg, with a salt of iron, and soda, is capable of instantly producing a soluble albuminate of iron and soda, or an albumino-ferrate of the alkaline base. The chemical combination of this compound is such, that it is not altered by the yellow ferrocyanide of potassium, the most delicate test of the salts of iron, unless a few drops of acid, as, for example, the hydrochloric, be previously added to the soluble albuminate; thus proving that this decomposition cannot be effected by the agency of the alkalies, but only by some acids, since the potassium of the cyanide is not able to displace the oxide of iron, becoming oxidized at its expense, and setting the metal free, as occurs with the other ferruginous preparations. Considering that we find in the blood, albumen, soda in excess, and iron, and having shown how these three bodies, by simple direct contact, form a soluble salt, the chemical combination of which is so powerful that it is not destroyed by the most delicate re-agents,—may we not fairly infer that the iron exists in the blood as an albuminate of iron and soda? and would it not, therefore, be reasonable to administer iron in the various diseases in which it is prescribed, principally in reference to the state of the sanguineous system, in the form of albuminate, as that in which nature itself has placed it within our organism,—one of the products, so to speak, on which our life depends. When I read in works of chemistry that the yellow ferrocyanide of potassium is not capable of demonstrating the presence of iron in the blood, until a stream of chlorine has first been passed through the latter to destroy its colouring matter, I am confirmed in the opinion that the iron exists in that fluid as an albuminate of iron and soda, because this salt, requiring the addition of an acid to render it capable of detection by the cyanide, is supplied with it by the chlorine, which, in destroying the organic colouring matters, becomes converted into hydrochloric acid by uniting with their hydrogen. Physicians have long been puzzled, and are still at a loss, how to administer iron, a most valuable remedy, in the manner most suitable to the internal organism; hence the great number of preparations of this metal. Some object to its saline combination with mineral acids, on the ground that these are inorganic, and they prefer giving it in the metallic or oxidized state, leaving to the acids of the stomach to form with it compounds which may be carried into the circulation. Others, unwilling to run the risk of having the greater part of the iron—little or not at all acted on—expelled with the fæces, prescribe it in the saline state, but combined with organic vegetable acids; hence we have the malate, tannate, citrate, &c., of iron. Others, still more scrupulous, wish to have it united to acids of an animal nature, and prefer the lactate, the cyanide, &c.; and I, going still further

would recommend its employment in the state of albuminate of iron and soda, requesting physicians to take into consideration what I have advanced, and to ascertain if practice will in this instance corroborate theory.

In preparing the albuminate of iron and soda I employ the following process. Take 112 grains of caustic soda, and 104 of sulphate of iron. Having dissolved both in a sufficient quantity of distilled water, let the solutions be poured on the whites of four eggs previously beaten up; let all now be shaken together and poured upon a filter to separate the hydrated oxide of iron which has precipated, since all the iron is not in this case converted into albuminate. To the filtered liquid, which now contains, in addition to the albuminate, sulphate of soda formed by the decomposition of sulphate of iron by the soda present in excess, lime water is to be added, to decompose the sulphate of soda, by which an insoluble sulphate of lime is precipitated; to separate the latter the mixture is to be again filtered, and, as the filtered fluid will now contain an excess of lime, it is to be subjected to the action of a stream of carbonic acid, care being taken to avoid using an excess of the latter; and again filtered to get rid of the insoluble carbonate of lime thus formed. The filtered fluid is now to be allowed to evaporate in a wide shallow vessel, and with the aid of the heat of a stove, until it is reduced to a pint. A clear orange yellow, slightly saltish, chalybeate solution is thus obtained, which, as already mentioned, does not give a precipitate with ferrocyanide of potassium without the previous addition of an acid. Each ounce of this liquid contains approximatively four grains of the albuminate, *plus* an excess of albumen and soda, as may be seen by referring to the process employed; the solution, consequently, has a slightly alkaline re-action. It is desirable that the soda should thus be present in excess, in order that the compound should be conformable to the state in which it exists in the blood, where we find the albumen rendered alkaline by an excess of soda. This albuminate may be made into a syrup, and rendered grateful by the addition of aromatic waters. The composition of the albuminate of iron and soda is represented by the following formula:—$C^{30}\,H^{50}\,O^{10} + HO + Fe^2\,O^3 + Na\,O + HO = \bar{A}l\,Fe^2\,O^3 + Na\,O + 2\,HO$ water. As the albumen loses a portion of its nitrogen in order to be converted into albuminic acid, we must suppose that a portion of the soda by its presence determines the formation of a fatty matter at the expense of other principles of the same albumen, and then becomes saponified. I have given the formula of the albuminate of iron and soda alone, neglecting the excess of soda and of albumen, which, although united to the liquid, perhaps, with some other soluble salts of the albumen of the egg (chlorides), I do not consider to form part of the saline compound, which may be obtained in radiated crystals by evaporating the solution to dryness.—*Bulletino delle Scienze Mediche di Bologna*, November and December, 1852, p. 385.



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